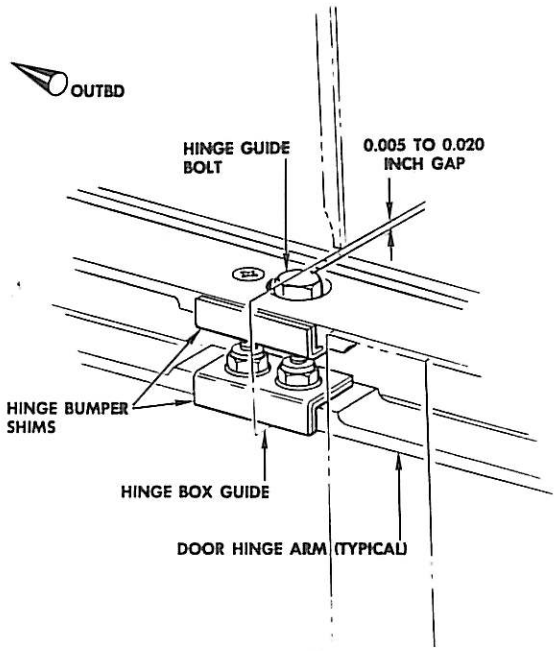
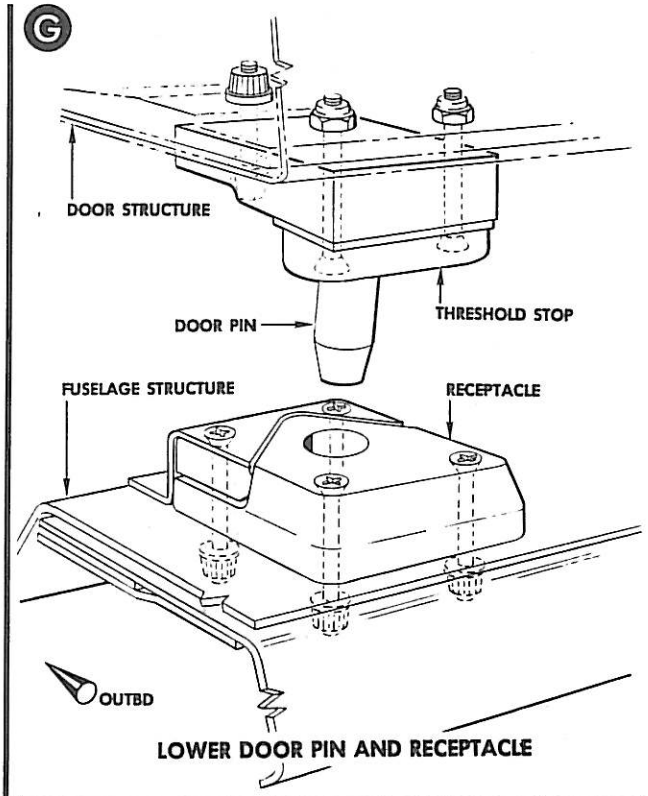
E



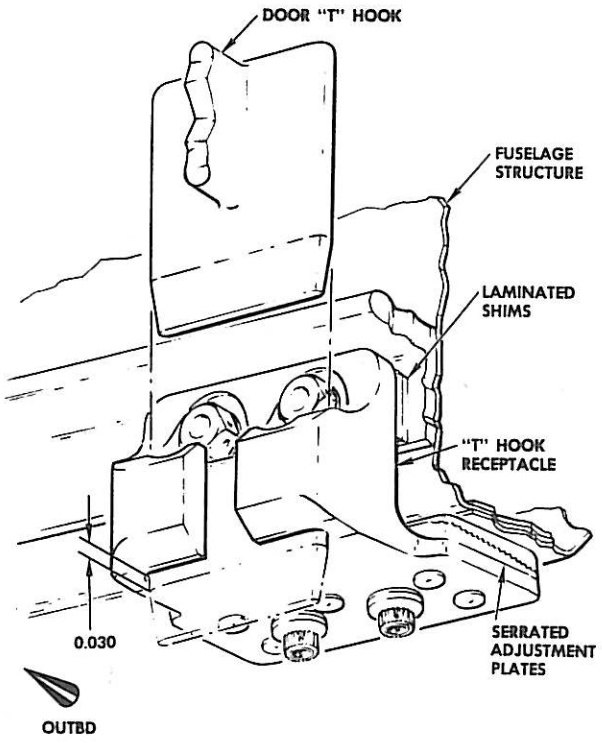
HINGE ARM-TO-HINGE BOX GUIDE CLEARANCE

G



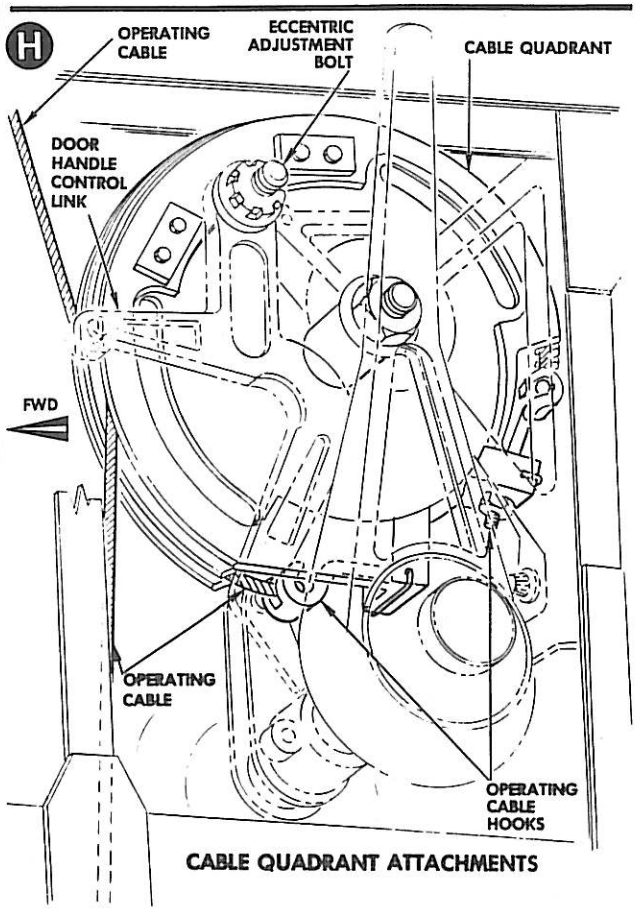
LOWER DOOR PIN AND RECEPTACLE

F



DOOR UPPER "T" HOOK AND RECEPTACLE

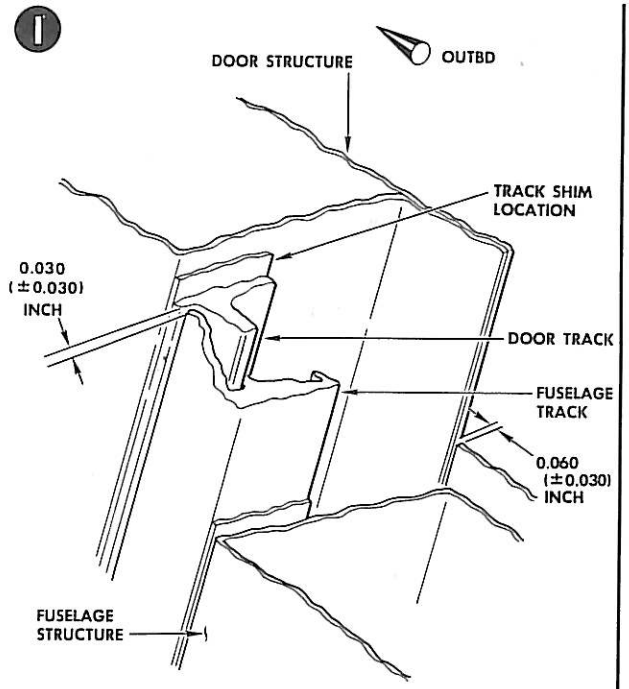
H



CABLE QUADRANT ATTACHMENTS

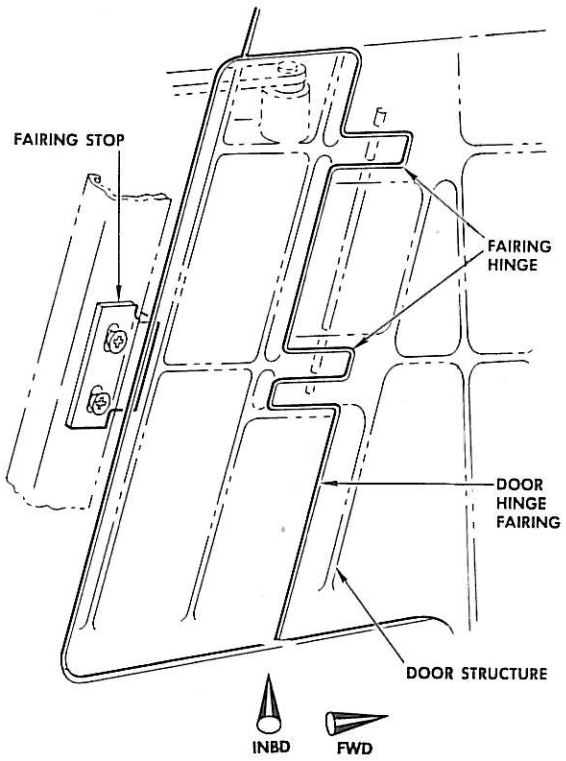
22.02.52.047-2 B

I



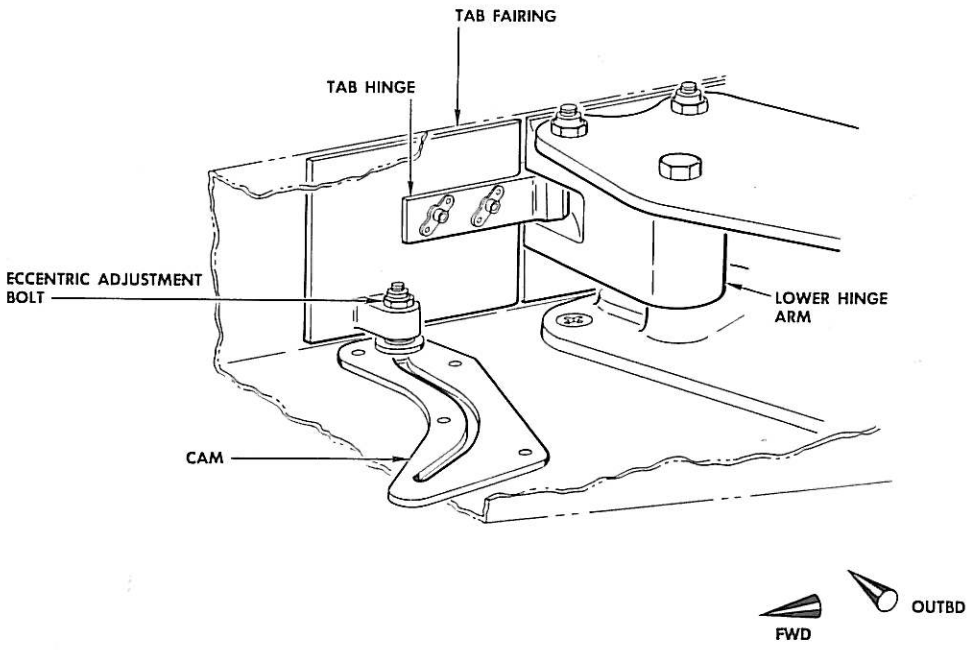
DOOR TRACK CLEARANCE

K



DOOR HINGE FAIRING AND STOP

J



LOWER HINGE ARM TAB FAIRING

22.02.52.047-3B

(6) To adjust door operating cable proceed as follows:

(a) Open door and place wood block between bottom of door and door threshold, lower to closed position until door weight is supported on wood block.

(b) Adjust lower portion of operating cable to a tension load of 450 (±20) pounds.

(c) Raise door and remove wood block.

(d) With door in the closed position, rotate handle to the full over-center and locked position.

(e) Adjust lower portion of operating cable to a tension load of 130 (±10) pounds. If cable tension exceeds given load limits, tighten upper cable hook and loosen lower cable hook. If cable tension is below given load limits, loosen upper cable hook and tighten lower cable hook (same number of turns at each cable hook).

(f) Repeat steps (a) and (b), 450 (±20) pounds tension must be maintained on lower portion of cable with door supported on wood block.

(7) Raise and rotate door outward to full open position, depress interlock mechanism actuating pin on forward edge of door and secure so that handle interlock pin is withdrawn from the door handle shaft.

(8) Disconnect the interlock mechanism push-pull rod from the interlock actuating lever at lower end of door handle control link.

CAUTION: DO NOT ROTATE DOOR HANDLE TO "CLOSED" POSITION WITH DOOR OPEN AND INTERLOCK MECHANISM DISCONNECTED; DAMAGE TO DOOR HINGE FAIRING WILL RESULT.

*(9) To accomplish this step, gain access to slide tube and pulley brackets by removing the two small access plates on the forward inner surface of door. Loosen bolts securing brackets at each end of slide tube.

NOTE: Bolts are loosened to permit shifting of the slide tube assembly in a fore or aft direction to align door and prevent cocking as door lowers.

(10) Rotate door 30 degrees to open position (approximately) and check hinge clearances.

*Asterisk indicates steps not required where slide tube, pulley brackets, or door hinge have not been removed or disturbed.

(a) Remove or add washers under heads of hinge guide bolts to obtain 0.005 to 0.020 inch clearance between bolthead and the fuselage hinge box guides.

(b) If necessary trim the fuselage hinge box guides to obtain correct clearance.

(c) Remove or add hinge bumper shims as required to make hinge fair in with fuselage in a door closed position.

NOTE: There shall be a minimum of one shim installed at each bumper location.

(11) Slowly lower door into the fuselage opening.

(a) Check door-to-fuselage skin clearances and trim only if necessary. Avoid excessive trim as final trim cannot be accomplished until after completion of slide tube adjustment.

(b) From inside the airplane, check alignment of the lower door pins and the upper "T" hooks with their respective receptacles as they begin to mesh.

CAUTION: DO NOT FORCE DOOR.

	Figure Detail
*(c) Shift slide tube brackets accordingly to accomplish fore-and-aft door alignment.	C & D
(d) Measure inboard and outboard door hook and receptacle alignment at top of door. If misalignment exceeds 0.015 inch, or if skin gap along top of door exceeds 0.060 (+0.010, -0.030) inch, open door and adjust the fuselage mounted "T" hook receptacles in an inboard or outboard direction. The receptacles are serrated to allow adjustment in increments of 0.032 inch.	F

NOTE: Shifting of the hook receptacles must be accompanied by varying the thickness of laminated shims at both attaching legs of "T" hook receptacles. Do not bend attaching legs of hook receptacles when tightening bolts. Shims are adjustable within 0.003 inch which is maximum gap permissible before tightening bolts.

*Asterisk indicates steps not required where slide tube, pulley brackets, or door hinge have not been removed or disturbed.

Figure Detail

(e) Measure inboard and outboard door pin alignment at bottom of door. If misalignment exceeds 0.015 inch or if skin gap along bottom of door exceeds 0.060 (±0.030) inch, open door and add or remove shims beneath attaching legs of the lower door pins. — G

*(12) Repeat steps (11) (a) through (11) (e) until the lower door pins and the upper "T" hooks align with their receptacles within 0.015 inch in all directions. The 0.015 inch dimension is taken at the full shank portion of the hooks and pins. — F & G

(13) Lower door until the threshold stops on the lower door pins contact the pin receptacles. If gap between receptacle and threshold stop is greater than 0.030 inches, adjust nuts on the operating cable hooks to allow door to bottom fully on the threshold stops. Recheck cable tension as directed in step (6). — G & H

NOTE: Door shall contact both stops at the same time.

*(14) Continue motion of the door handle until it overcenters.

(a) Check that full width section of the upper door "T" hooks extend through their receptacles. Add or remove shims behind the threshold stops on the lower door pins as required. — F & G

*(b) Check gap at door tracks on forward and aft edges of door. Gap shall be 0.030 (±0.030) inch at any portion of track, both sides of door with door closed and locked (cinched down). — I

*NOTE: When the door is closed and locked (cinched down), the door may shift to one side causing the track clearance on one edge of door to exceed the 0.030 (±0.030) inch dimension; however, this clearance shall not exceed the sum of the maximum track clearances for both edges of door. Door tracks may be shimmed up to 0.030 inch maximum to obtain correct clearance.

WARNING: DO NOT FILE TRACKS.

*Asterisk indicates steps not required where slide tube, pulley brackets, or door hinge have not been removed or disturbed.

Figure Detail

*(15) With door full closed make final adjustment to slide tube brackets at each end of the slide tube. Brackets are serrated for adjustment in increments of 0.032 inch. — C & D

(a) Door shall clear fuselage skin 0.060 (±0.030) inch; trim as necessary.

NOTE: Fuselage skin clearance shall exceed track gap.

(b) For allowable mismatch between door and fuselage skin; refer to Figure 502.

NOTE: A maximum of one tapered shim, tapered 0.030 to 0.060 inch in a forward or aft direction, or tapered in an inboard or outboard direction may be installed between each lower door pin and the door structure to assist alignment. Use shims only if necessary to align door pins with their receptacles.

(c) Adjust door operating cable as directed in step (6).

(16) Rotate door handle toward the OPEN position.

(a) Door shall begin to lift at 8.5 (approximately) degrees minimum handle rotation.

(b) With door fully raised and open, check for clearance between lower surface of door control plate and top of bolt retainers in bottom of slide tube well. — H

(17) Adjust nylon hinge fairing stop on the forward inner surface of the door to hold the hinge fairing in contour when door is in the fully closed position. — K

NOTE: The hinge fairing stop is slotted to permit adjustment.

(18) Adjust the lower hinge arm tab fairing. — J

(a) Remove two screws securing the hinge arm tab fairing (if installed) and remove tab fairing to gain access to eccentric adjustment bolt.

(b) Position adjustment bolt (if removed) so that eccentric head of bolt engages grooved track in the lower fuselage hinge box guide, with threaded end of bolt through attach fitting of hinge arm tab.

*Asterisk indicates steps not required where slide tube, pulley brackets, or door hinge have not been removed or disturbed.

Figure
Detail

(c) Add or remove washers between head of adjustment bolt and hinge tab fitting to adjust eccentric bolt engagement with grooved track.

(d) Rotate the eccentric adjustment bolt until the hinge arm tab fairs in with the fuselage contour; tighten nut.

(e) Reinstall screws securing the hinge arm tab fairing to tab hinge.

(19) Free the interlock mechanism and reconnect the aft push-pull rod of the interlock mechanism to the interlock actuating lever at the lower end of the door handle control link. B

(20) With door fully raised and open, adjust the interlock mechanism to meet the following conditions:

(a) Handle interlock pin is fully inserted into handle shaft.

(b) Interlock actuating pin on forward edge of door is fully extended. Switch pin on fuselage door frame should be extended 0.2 inch.

(c) With door closed and inner handle overcenter and bottomed out, upper roller on the interlock mechanism actuating lever should contact door handle control link. If link does not contact roller, lengthen handle latch push-pull rod and, to compensate, shorten interlock pin push-pull rod.

CAUTION: WHEN CLOSING DOOR NEVER ALLOW DOOR TO FREE FALL INTO DOOR OPENING; DAMAGE TO DOOR HINGE MECHANISM MAY OCCUR. MANUALLY ASSIST DOOR INTO CLOSED POSITION. DO NOT RESTRAIN DOOR AT INNER HANDLE, BUT ON AFT SIDE OF DOOR INNER SURFACE.

(21) Raise door carefully and swing out of the door opening. Check that door handle is locked to prevent lowering of door when door is approximately 20 degrees out of the opening.

CAUTION: IN THE EVENT THAT INTERLOCK MECHANISM IS NOT ENGAGED IN DOOR HANDLE SHAFT, DO NOT LOWER DOOR; DAMAGE TO THE HINGE FAIRING WILL RESULT.

(22) Swing door closed and lower carefully. Check that the interlock actuating pin on forward side of door extends below interlock hook on door jamb.

CAUTION: WHEN CLOSING DOOR NEVER ALLOW TO FALL FREE INTO DOOR OPENING; DAMAGE TO DOOR HINGE MECHANISM MAY OCCUR. MANUALLY ASSIST DOOR INTO CLOSED POSITION. DO NOT RESTRAIN DOOR AT INNER HANDLE, BUT ON AFT SIDE OF DOOR INNER SURFACE.

(23) To check door handle operating loads proceed as follows:

(a) With interior trim panel removed, place door in the closed and locked position.

(b) Using a spring scale, or torque wrench with special adapter made to fit inner handle hub, check door handle operating loads. Using a spring scale, handle loads shall not exceed 50 pounds through full range of travel with trim panel removed or 70 pounds with trim panel installed. Using a torque wrench with special adapter, handle loads are measured in foot-pounds; 50 foot-pounds through full range of travel with trim panel removed or 70 foot-pounds with trim panel installed. A minimum of 25 pounds is required to rotate the handle to the over-center unlocked position.

NOTE: If spring scale is used handle loads are measured perpendicular to a point 10 inches from center of handle shaft, in direction of rotation.

*(24) When hinge assembly or door assembly has been replaced, reinstall the slide tube and pulley bracket access doors on the interior surface of the door.

(25) Remove the interior door handle and replace the soundproofing and door interior trim; refer to Chapter 25, EQUIPMENT/FURNISHINGS.

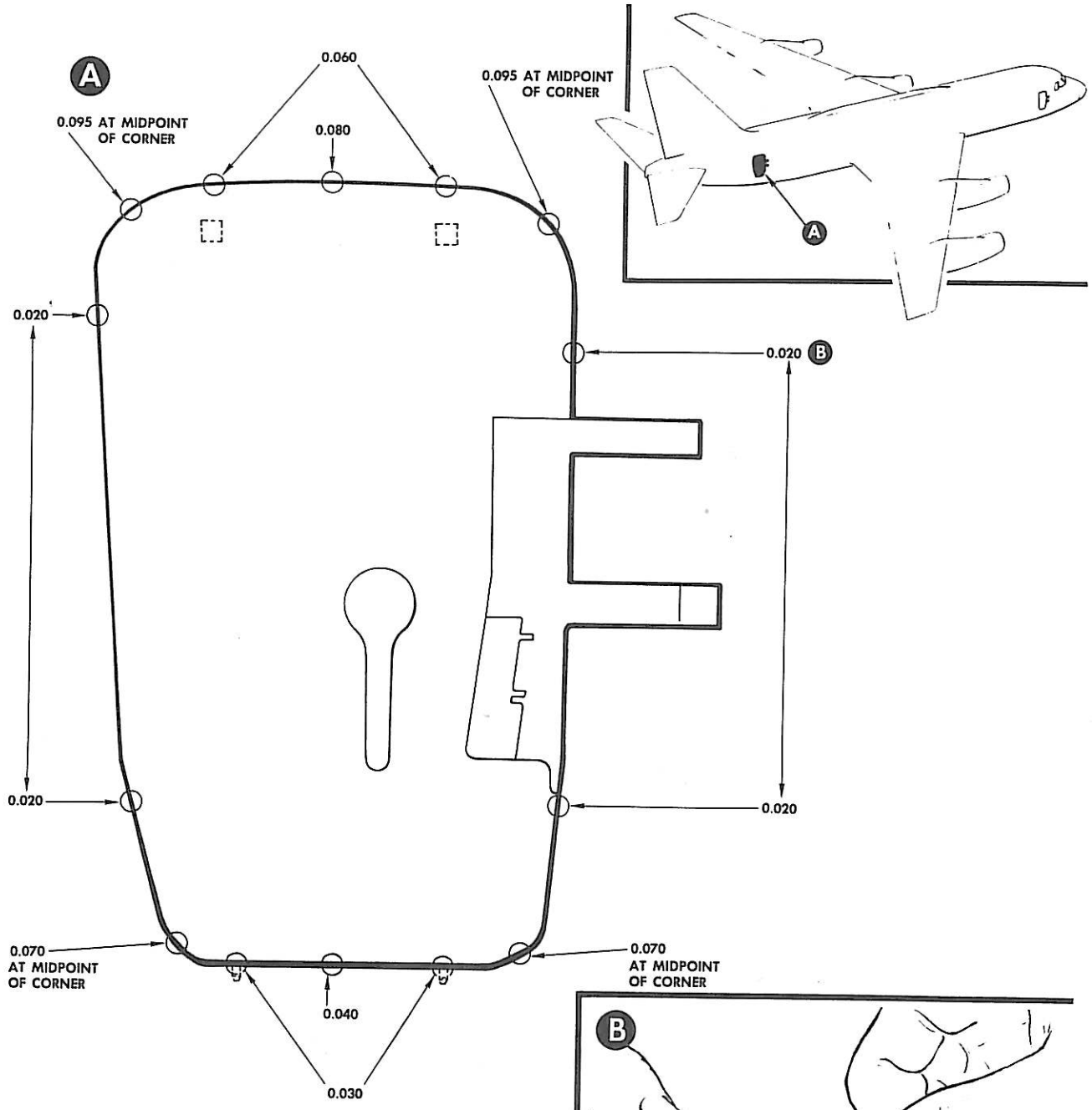
(26) Reinstall the interior door handle; Refer to 52-1-0.

(27) Adjust door microswitch; Refer to 52-6-0.

(28) Accomplish door inspection/check.

*(29) When door assembly has been replaced with a new door, pressurize fuselage cabin to normal operating pressure as directed in Chapter 21, AIR CONDITIONING. Recheck mismatch between door and fuselage skin; refer to Figure 502.

*Asterisk indicates steps not required where slide tube, pulley brackets, or door hinge have not been removed or disturbed.



NOTE:

1. ALL DIMENSIONS SHOWN ARE BELOW CONTOUR, ±0.030 INCH TOLERANCE
2. AFTER PRESSURIZATION OF CABIN AS DIRECTED IN CHAPTER 21, AIR CONDITIONING, DOOR CONTOUR MUST MATCH FUSELAGE CONTOUR.

22.02.52.101A

TYPICAL DOOR CONTOUR CHECK

REAR SERVICE DOOR - INSPECTION/CHECK

1. Inspection/Check Rear Service Door Assembly

A. Equipment Required - Spring scale or torque wrench with special adapter (Convair TSTO 22-57156) which fits inner handle hub to measure interior door handle operating loads. Spring scale also needed to check door snubber.

B. Procedure.

(1) With door closed, rotate the interior door handle approximately 180 degrees to the OPEN position.

(a) Door shall raise and control handle shall bottom out in the overcenter position.

(b) Door shall remain raised without applying external force.

(2) Rotate door to full open position.

(a) Door shall swing out until hinge-stop linkage is fully extended and bottomed. Slowly rotate door to fully open and fully closed positions to determine that door snubber piston is not bottoming at extremes of travel. If proper snubber operation is questionable, check snubber as follows:

Disconnect snubber piston rod end from door hinge.

With snubber piston retracted, apply a constant 51 pound pull to piston rod end with spring scale and record time for piston to travel from fully retracted to fully extended position. Piston travel time should be a minimum of 12 seconds and a maximum of 50 seconds.

(b) Rotate interior door handle toward the closed position. The door interlock mechanism shall prevent handle movement.

CAUTION: IN THE EVENT THE INTERLOCK MECHANISM IS NOT ENGAGED IN THE DOOR HANDLE SHAFT, DO NOT ALLOW DOOR TO LOWER; DAMAGE TO HINGE FAIRING WILL RESULT. REFER TO DOOR ADJUSTMENT/TEST PROCEDURE.

(c) Hold-open hook shall engage in the hinge-stop linkage.

(d) Pull edge of door toward the closed position. Hold-open hook shall prevent door closing.

(e) Actuate hold-open hook toward door opening. Hook shall toggle into position freeing the hinge-stop linkage for movement.

(3) Rotate door into fuselage opening and slowly rotate the interior door handle to CLOSED position.

CAUTION: WHEN CLOSING DOOR, NEVER ALLOW DOOR TO FREE FALL INTO DOOR OPENING; DAMAGE TO DOOR HINGE MECHANISM MAY OCCUR. MANUALLY ASSIST DOOR INTO CLOSED POSITION. DO NOT RESTRAIN DOOR AT INNER HANDLE, BUT ON AFT SIDE OF DOOR INNER SURFACE.

(a) As door lowers, check alignment of the lower door pins and the upper "T" hooks with their respective receptacles as they begin to mesh.

(b) As door reaches the fully closed position, it should bottom on the threshold stops (maximum allowable gap 0.030 inch) and the door handle shall rotate overcenter.

(c) The interlock actuating pin on forward edge of door shall extend below hook on door jamb sufficiently to actuate door-open warning microswitch.

(d) The door-open warning microswitch plunger shall be depressed 0.210 inch maximum when the interlock mechanism actuating pin reaches its fully extended position.

(e) Door seal shall contact striker around entire periphery of door.

(f) For allowable mismatch between door and fuselage skin; refer to Adjustment/Test. Door shall clear fuselage skin 0.060 (±0.030) inch.

(g) The exterior door handle shall be flush with the exterior skin of door.

(4) Check interior door handle loads with spring scale or torque wrench. Handle load shall not exceed 50 pounds through full range of travel with trim panel removed (70 pounds with trim panel installed).

NOTE: If spring scale is used, load on handle is measured perpendicular to a point on handle centerline 10 inches from center of handle hub, in direction of handle rotation.

(5) Check lower operating cable tension; refer to Adjustment/Test for procedure.

(6) Repeat steps (1) through (3) (g) except use the exterior door handle.

(7) Rotate the interior door handle to the OPEN position, then rotate the exterior door handle to OPEN position.

(a) At OPEN position the exterior door handle shall engage the interior door handle.

(8) Close door using the exterior door handle.

CAUTION: WHEN CLOSING DOOR NEVER ALLOW DOOR TO FREE FALL INTO DOOR OPENING; DAMAGE TO HINGE MECHANISM MAY OCCUR. MANUALLY ASSIST DOOR INTO CLOSED POSITION. DO NOT RESTRAIN DOOR AT INNER HANDLE, BUT ON AFT SIDE OF DOOR INNER SURFACE.

EMERGENCY EXITS - DESCRIPTION AND OPERATION

1. General

In addition to the main entrance and service doors which are used for emergency egress, two emergency exits are also provided - one on each side of the fuselage. (The flight compartment sliding windows are also considered emergency exits. For description and operation, refer to Chapter 56, WINDOWS.) These exits are located over the wing between stations 715.90 and 739.90 approximately 17 inches above the cabin floor. Each emergency exit is a plug-type door which opens inward and is approximately 20 x 36 inches in size. Each emergency exit is secured in place by an overcenter latching mechanism on its upper edge and sealed around its periphery by a tubular-type rubber seal which is energized by cabin pressure. Left and right emergency exit doors may be identified by position of armrest. With door properly installed in the correct side of airplane, the armrest will be near the aft edge of door and will align with seat armrest. Figure 1 shows an illustration of the emergency exit door.

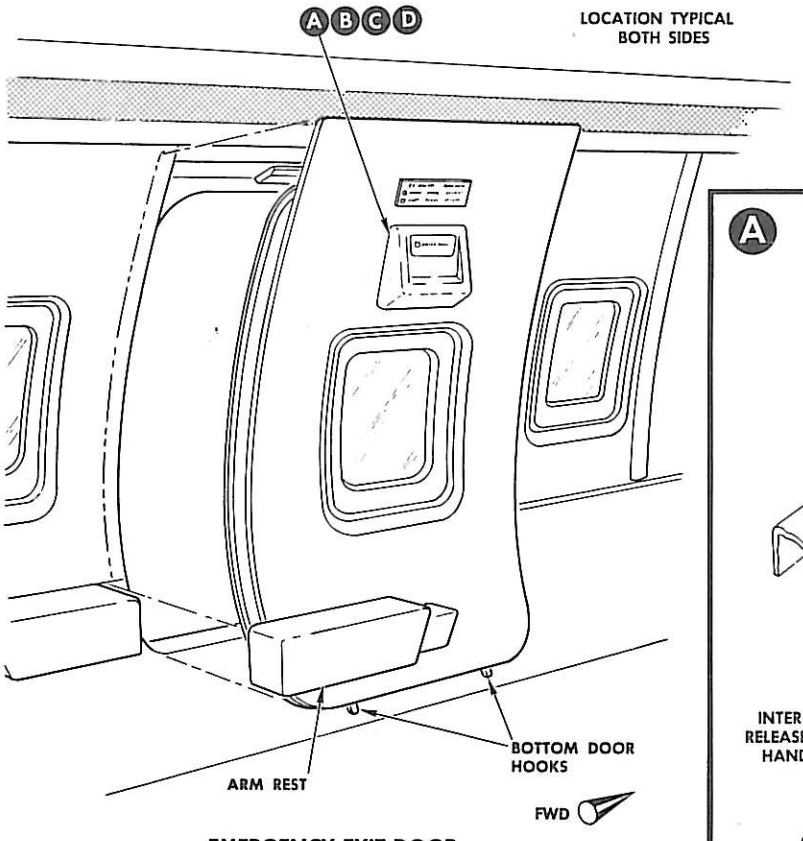
2. Structure

The emergency exit door structure consists of a stamped channel-section outer frame with fore and aft beams interconnected by horizontal and vertical stiffeners. The frame is stamped in two sections and spliced at the top and bottom centerline. The fore and aft beams are tee-sections with a formed inner flange and web, while the horizontal and vertical stiffeners are zee and channel sections. In general, 2024-T4 aluminum alloy is used throughout except in the outer skin. The outer skin is chemically milled 2024-T3 aluminum alloy with a typical window and window frame installed in the center (refer to Chapter 56, WINDOWS). A chemically milled aluminum alloy plate is riveted and screwfastened to the exit door around its entire periphery and acts as a bearing surface between the door and the fuselage structure. This bearing plate also serves as a retainer for the tubular-type seal around the door.

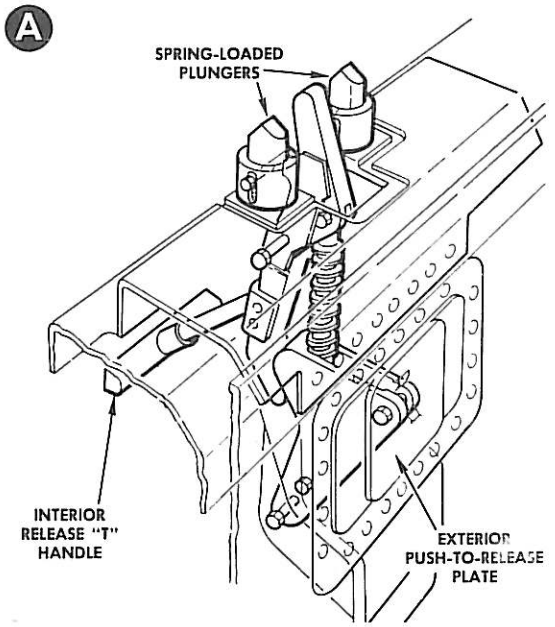
3. Latching Mechanism

The door is retained against inward acting loads by two hooks on the bottom edge of the door and a latching mechanism at the top edge. The bottom hooks fit into holes in two adjustable fittings bolted to the fuselage door frame. These fittings are serrated for inboard and outboard door adjustments. Laminated shims are added or removed from under the fittings for vertical adjustment.

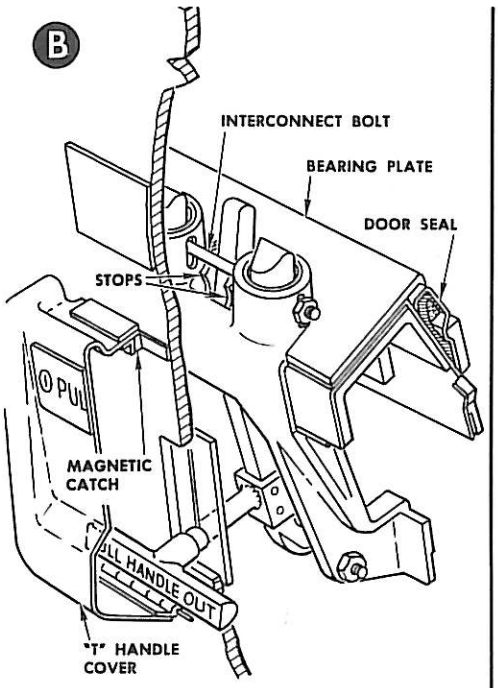
The latching mechanism on the upper edge of the emergency exit door consists of an interior recessed "T" handle attached to a spring-loaded vertical actuating lever and two spring-loaded plungers. A "push-to-release" plate is provided on the exterior surface of the exit door to open the door from the outside. The spring-loaded plungers engage a fitting in top of the door



EMERGENCY EXIT DOOR
VIEW LOOKING OUTBOARD

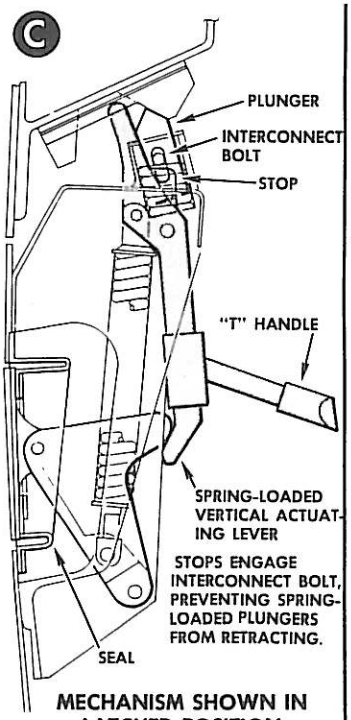


OVERCENTER LATCHING MECHANISM
VIEW LOOKING INBOARD

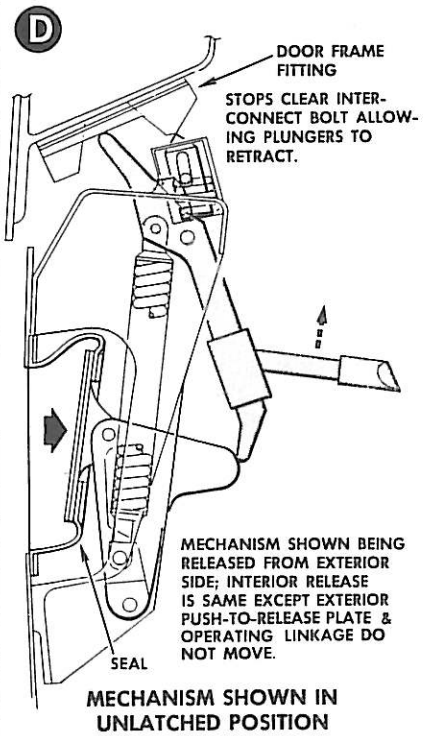


OVERCENTER LATCHING MECHANISM
VIEW LOOKING OUTBOARD

30.30.52.010 B



MECHANISM SHOWN IN
LATCHED POSITION



MECHANISM SHOWN IN
UNLATCHED POSITION

frame and lock the door securely in place. This upper door fitting is adjusted in the same manner as the lower door hook fittings. Two stops located near the upper end of the vertical actuating lever engage an interconnecting bolt between the spring-loaded plungers. These stops prevent the plungers from retracting and unlatching the door, except only when the "T" handle is pulled or the exterior "push-to-release" plate is depressed. The upper end of the vertical actuating lever also engages a slot in the upper door frame fitting to facilitate opening the exit door. When the "T" handle is pulled or the exterior "push-to-release" plate is depressed, the vertical actuating lever will pivot and disengage with the interconnecting bolt between the plungers. At the same time, the upper end of the vertical actuating lever exerts a prying action against the upper door frame fitting to overcome the spring-loaded plungers and open the exit door. A cover, hinged at the bottom, is installed on the interior surface of the door to cover the recessed "T" handle location. This cover is held in the closed position by a snap fastener, located at the top edge of the cover.

4. Seal

A tubular-type seal (see Figure 1) that is energized by cabin pressure is installed in a recess around the periphery of each emergency exit door. The seal construction consists of a molded silicone rubber and closed cell silicone sponge section, covered with silicone rubber cloth. In a cross-sectional view of the seal, the molded rubber section resembles a "J" with the sponge glued in the hooked portion. 0.25-inch holes are provided approximately six inches apart around the inside periphery of the seal. Cabin pressure passes through these holes to force the outer rubber cloth portion of the seal against the fuselage opening.

EMERGENCY EXIT DOORS - TROUBLE SHOOTING

POSSIBLE CAUSE	ISOLATION PROCEDURE AND CORRECTION
1. UNLOCKING LOADS OF DOOR LATCHING MECHANISM EXCESSIVELY HIGH	
A. Latching mechanism spring improperly adjusted.	Loosen jam nut at lower end of latching mechanism spring until unlocking loads are within limits; refer to adjustment/test door and latch rigging procedure.
2. UNLOCKING LOADS OF DOOR LATCHING MECHANISM EXCESSIVELY LOW	
A. Latching mechanism spring improperly adjusted.	Tighten jam nut at lower end of latching mechanism spring until unlocking loads are within limits; refer to adjustment/test door and latch rigging procedure.
B. Latching mechanism spring broken.	Replace spring.
3. DOOR LATCHING MECHANISM WILL NOT LOCK	
A. Door not properly adjusted and rigged to fuselage opening.	Check engagement of the spring-loaded plungers on upper surface of door with the upper door frame plate. Check that stops on spring-loaded vertical actuating lever engage interconnect bolt between the spring-loaded plungers. Accomplish adjustment/test door and latch rigging procedure.
B. Interconnect bolt between spring-loaded plungers broken.	Replace interconnect bolt.
C. Latching mechanism sticking.	Clean and lubricate latching mechanism with specification MIL-G-7187 graphite grease.

EMERGENCY EXIT DOORS - REMOVAL/INSTALLATION

1. Removal/Installation Emergency Exit Door (see Figure 401)

Figure Detail

A. General.

Left and right emergency exit doors may be identified by position of door armrest. With door properly installed in the correct side of airplane, the armrest will be near the aft edge of door and will align with the seat armrest. Removal and installation procedures for the left and right emergency exits are identical.

B. Required Equipment - None.

C. Remove Emergency Exit Door.

(1) Pull down on "T" handle cover at top of door, inside of airplane.

(2) Pull interior release "T" handle outward and up.

(3) Hold door in place at bottom, and pull door inward at top be means of "T" handle until hooks on bottom of door disengage with the hook retainer fittings on door frame.

(4) Lift door upward and inward with both hands and remove from opening.

D. Install Emergency Exit Door.

(1) Lift door using armrest and interior release "T" handle.

(2) Insert hooks on bottom of door in the hook retainer fittings on door sill.

(3) With the lower door hooks engaged in the retainer fittings, push outward on door with the interior release "T" handle raised.

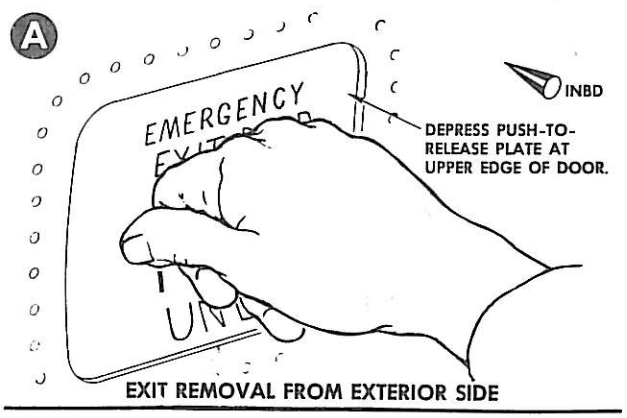
(4) Push the interior release "T" handle down and inward to lock door; close "T" handle cover.

2. Removal/Installation Emergency Exit Door Seal (see Figure 402)

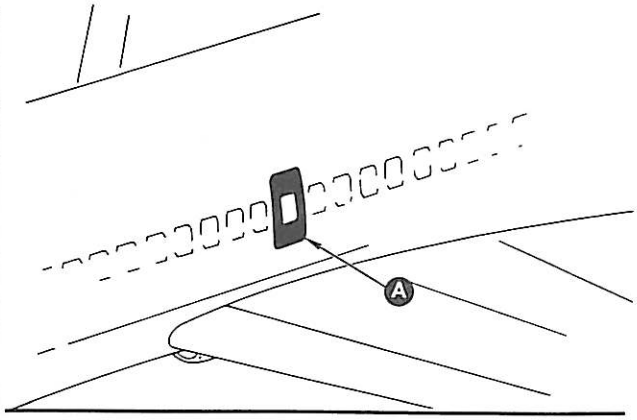
A. Equipment Required.

(1) Aliphatic naphtha.

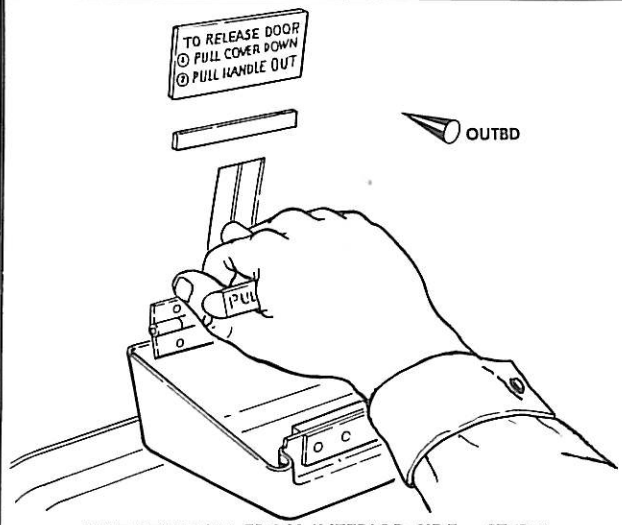
(2) 180 grit garnet paper.



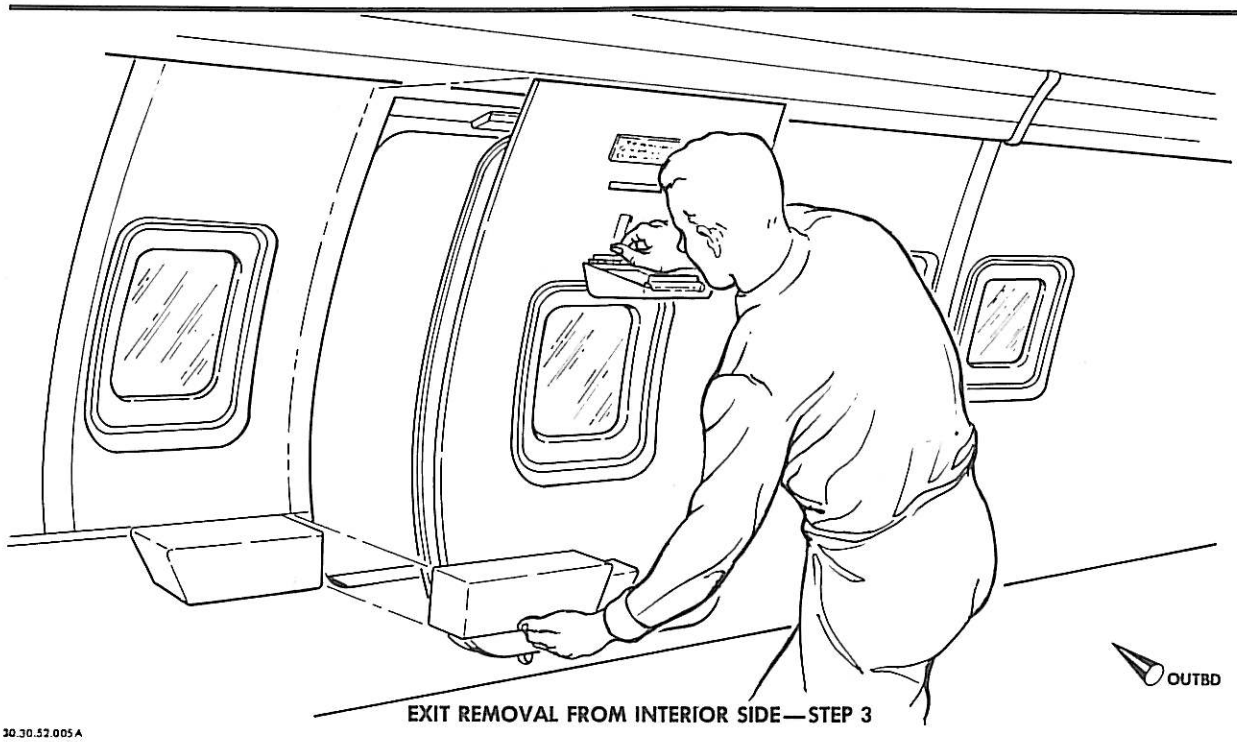
EXIT REMOVAL FROM EXTERIOR SIDE



EXIT REMOVAL FROM INTERIOR SIDE—STEP 1



EXIT REMOVAL FROM INTERIOR SIDE—STEP 2



EXIT REMOVAL FROM INTERIOR SIDE—STEP 3

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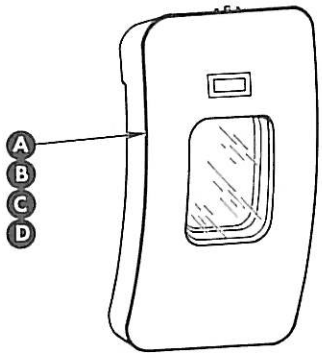
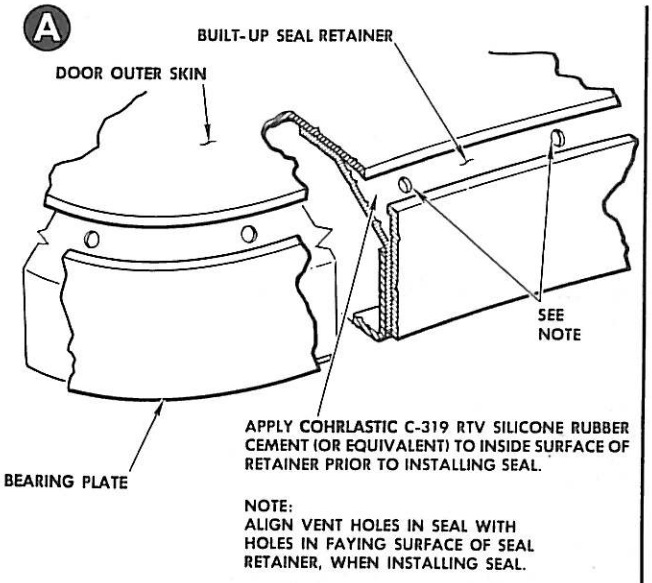
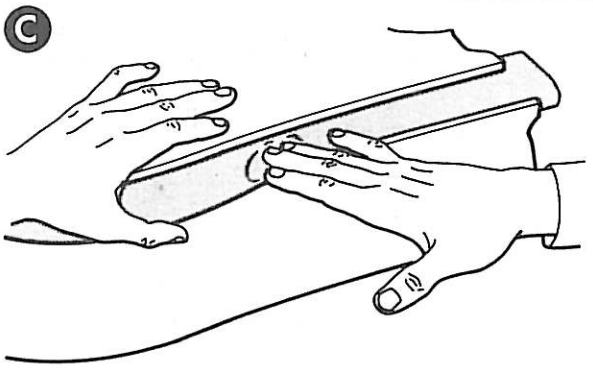


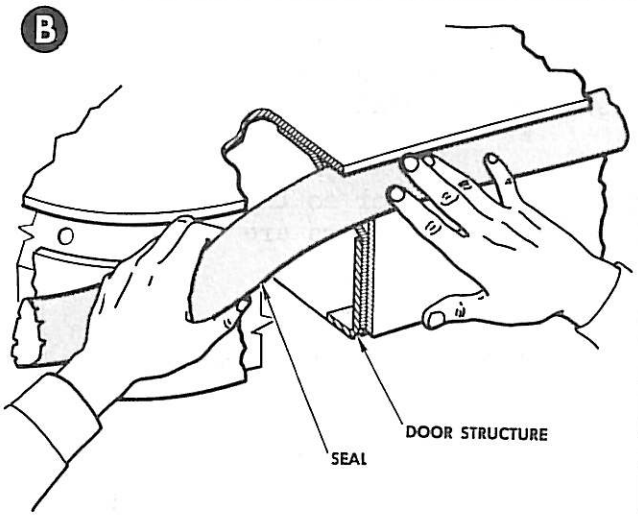
EMERGENCY EXIT DOOR



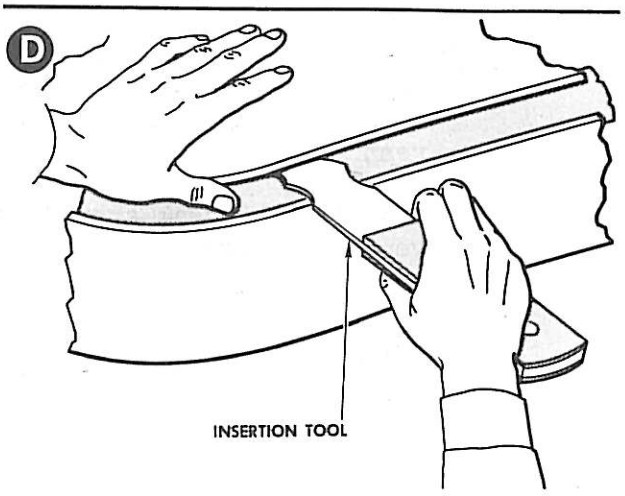
SEAL RETAINER



STEP 2—SEAL INSTALLATION



STEP 1—SEAL INSTALLATION



STEP 3—SEAL INSTALLED
(ALSO SHOWS METHOD OF REMOVING WRINKLES.)

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Figure Detail

(3) Cohrlastic 319 RTV silicone rubber cement (Connecticut Hard Rubber Co., New Haven, Conn.) or equivalent.

(4) Locally manufactured insertion tool as shown in Section 52-1-1 Figure 404 or equivalent.

B. Remove Seal.

(1) Insert tapered end of the insertion tool between outside edge of seal and door bearing plate.

(2) Pry outside edge of seal from under lip of door bearing plate, being careful not to damage seal.

(3) Grasp edge of seal and carefully pull seal from built-up retainer.

C. Install Seal.

(1) Using a flannel cloth soaked with aliphatic naphtha, clean inside surface of seal retainer around periphery of door. B

CAUTION: DO NOT ALLOW ALIPHATIC NAPHTHA TO COME IN CONTACT WITH THE PLEXIGLAS EMERGENCY EXIT WINDOW; PERMANENT DAMAGE WILL RESULT.

(2) With 180 grit garnet paper, roughen the inside surface of door seal (side with vent holes) then wipe with clean cheesecloth dampened with aliphatic naphtha.

(3) Apply a uniform thickness of Cohrlastic 319 cement (or equivalent) per manufacturer's instructions to the inside surface of the seal retainer (surface containing seal vent holes).

(4) Position the seal around periphery of the door so that vent holes are on the inside and the seal corners are located over the door corners.

NOTE: Proper alignment of the seal is important as the seal is molded in a rectangular shape to fit around outer edge of door.

(5) Insert the inside edge of seal under the protruding lip of the door outer skin. C

	Figure Detail
(6) Using fingers of each hand, wedge the outside edge of seal behind inside lip of the door bearing plate.	D
(7) Repeat steps (5) and (6) around periphery of door until seal installation is complete.	
(8) Using the tapered end of the insertion tool, smooth wrinkles out of seal.	E
(9) Allow cement, securing seal, to cure at room temperature for 24 hours.	

EMERGENCY EXIT DOOR - ADJUSTMENT/TEST

1. Adjustment/Test Emergency Exit Door (see Figure 501)

Figure Detail

A. General.

The adjustment/test procedures for the left and right emergency exits are identical.

B. Equipment Required.

(1) Push-pull scale (1-60 pounds) for checking door unlocking loads.

C. Procedure.

(1) Remove door interior trim (if installed). (Refer to Chapter 25, EQUIPMENT/FURNISHINGS.)

(2) With door removed from fuselage opening, lift door using armrest and the interior release "T" handle, and insert hooks on bottom of door in hook retainers on door sill.

(3) With lower half of door engaged with the hook retainer fittings, slowly close door.

(a) Check that forward and aft sides of door clear and do not bind with position blocks on the fuselage door frame structure.

(b) Check that exterior door skin periphery clears fuselage skin during closing operation.

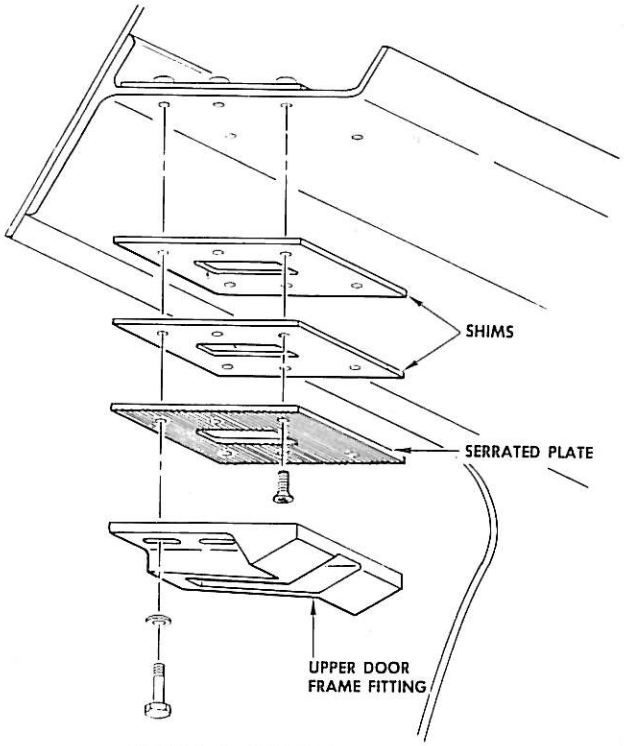
(c) When spring-loaded plungers at top of door contact the upper door frame fitting, check position of door before closing. If door is not positioned correctly, remove or add shims at the upper and lower door frame fittings to raise or lower the door enough to close door without interference. A & B

NOTE: Final adjustment is not accomplished until plunger engagement with the upper door frame fitting has been set.

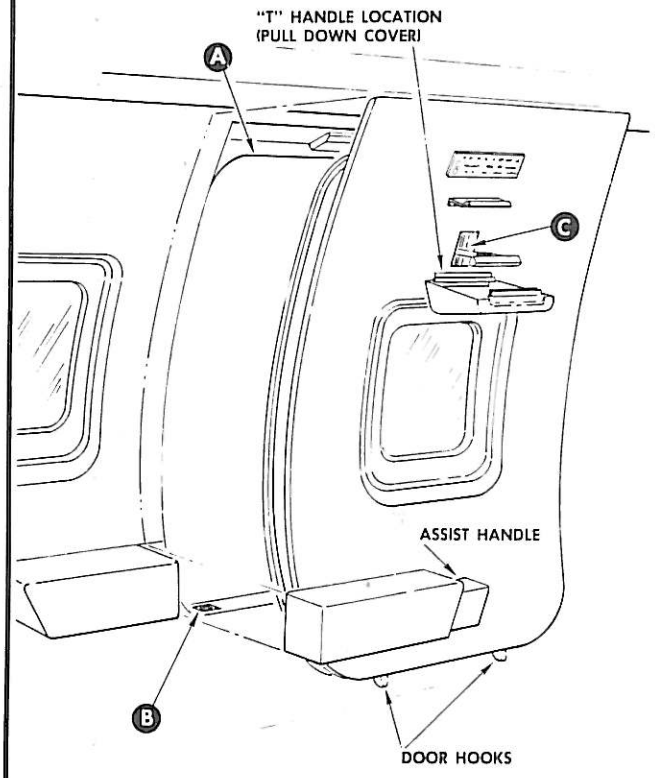
(4) Close and lock door by pushing outward on door with the interior release "T" handle raised, then pushing "T" handle down and inward to lock door.

(5) With door closed and locked, accomplish the following checks and adjustments:

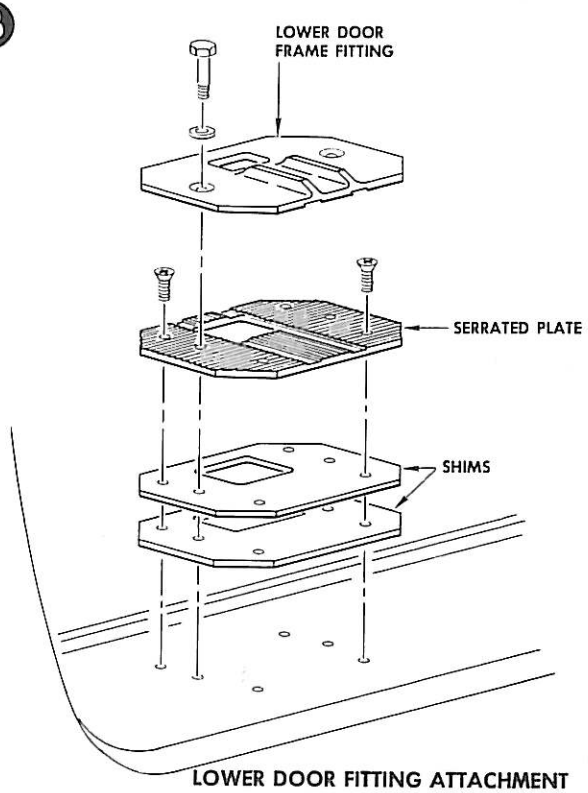
A



UPPER DOOR FITTING ATTACHMENT



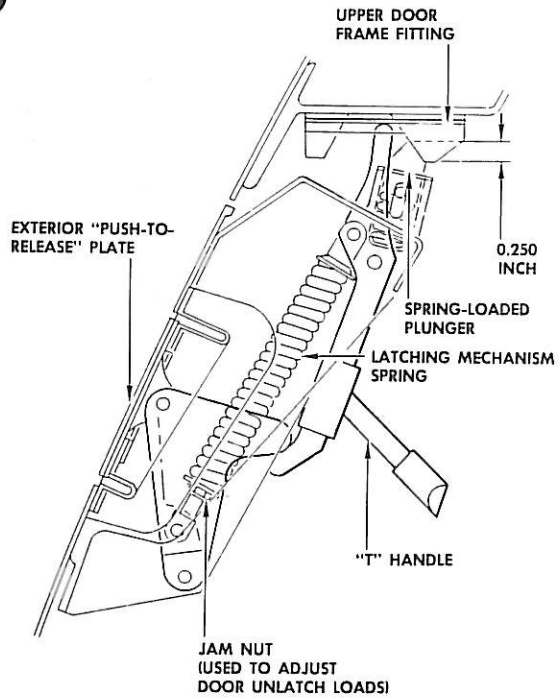
B



LOWER DOOR FITTING ATTACHMENT
TYPICAL TWO PLACES

30 02 52 036

C



LATCHING MECHANISM ADJUSTMENT

Figure Detail

(a) The spring-loaded plungers on the upper surface of door shall have 0.250 inch positive engagement with the latch face of the upper door frame fitting. To obtain the 0.250 inch dimension add or remove laminated shims as required under the upper and lower door frame fittings. — A,B&C

(b) With fuselage in the unpressurized condition, mismatch between door and fuselage skin shall not exceed 0.090 minimum and 0.15 maximum.

(c) With fuselage in the pressurized condition (8.2 psi) mismatch between door and fuselage skin shall not exceed 0.020 maximum.

(d) If door does not fair in with fuselage, move the upper and lower door frame fittings inboard or outboard as required. — A & B

NOTE: The door frame fittings are serrated for inboard and outboard adjustment.

(e) Gap around periphery of door skin with fuselage skin shall be 0.060 (+0.000, -0.030) inch. Trim fuselage skin as required.

(f) Door bearing plate sections shall ride on nylon tape installed on door frame ledge.

(g) Periphery of door seal shall be compressed by door frame ledge.

(6) With door closed and locked and using a push-pull scale attached to centerline of the interior release "T" handle, record force required to unlock door.

CAUTION: SUPPORT DOOR, TO PREVENT DOOR FALLING INSIDE FUSELAGE, DURING UNLOCKING OPERATIONS.

(a) Door shall unlock at 10 pounds minimum force when interior release "T" handle is pulled.

(7) Close and lock door by pushing outward on door with the interior release "T" handle raised and engaging spring-loaded plungers with the upper door frame fitting. Push "T" handle down and inward to lock door.

(8) With door closed and locked, record force required to unlock door using push-pull scale at the centerline of the door exterior "push-to-release" plate.

(a) Door shall unlock at 50 pounds maximum force when "push-to-release" plate is depressed.

Figure Detail

(9) If the interior and exterior unlocking forces of the emergency exit door are not within limits specified in steps (6)(a) and (8)(a), tighten or loosen jam nut at lower end of latching mechanism spring as required until unlock forces are within limits. C

NOTE: Tighten jam nut to increase door unlocking loads and loosen jam nut to decrease unlocking loads.

(10) Replace door interior trim. (Refer to Chapter 25, EQUIPMENT/FURNISHINGS.)

(11) Close and lock door.

(12) Perform leak test. (Refer to Chapter 21, AIR CONDITIONING.)

CARGO COMPARTMENT DOORS - DESCRIPTION AND OPERATION

1. General

A. Cargo Doors.

Two plug type sliding cargo doors (see Figure 1) are located on the lower right side of the fuselage at stations 521 and 1147. These doors are approximately 51 x 58 inches in size. The doors open inward enough to clear the door openings then slide forward on tracks. Heavy aluminum alloy plate stops are installed along the forward and aft edges of each cargo door; two smaller stops are provided at the top and bottom edges of each cargo door.

Both cargo compartment doors may be opened from inside or outside of the fuselage. Each door has a microswitch mounted in the fuselage structure. This microswitch, operated by the upper forward bayonet pin, controls the cargo compartment lighting (refer to Chapter 33, LIGHTS) and the associated door open warning light in the flight compartment.

B. Baggage Door (For Airplanes Equipped With Baggage Doors).

One plug type sliding aft cargo compartment baggage door (see Figure 2) is located on the lower right side of the fuselage at station 1268. The door is approximately 35 x 42 inches in size. The door opens inward enough to clear the door opening, then slides forward on tracks. Heavy aluminum alloy plates are installed along the forward and aft edges of the baggage door.

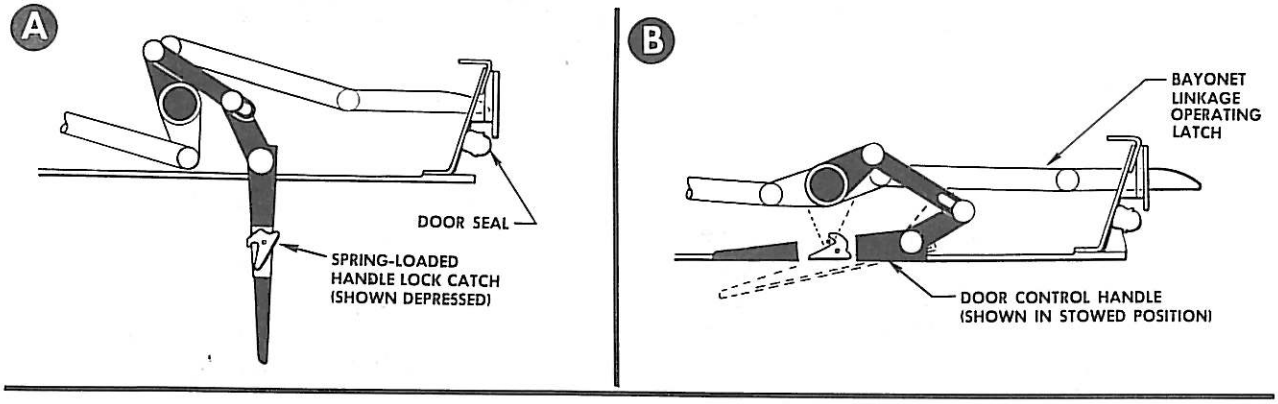
The baggage door may be opened from inside or outside of the fuselage. The door has a microswitch mounted in the fuselage structure. This microswitch, operated by the upper forward bayonet pin, controls the compartment lighting (refer to Chapter 33, LIGHTS) and the associated door open warning light in the flight compartment.

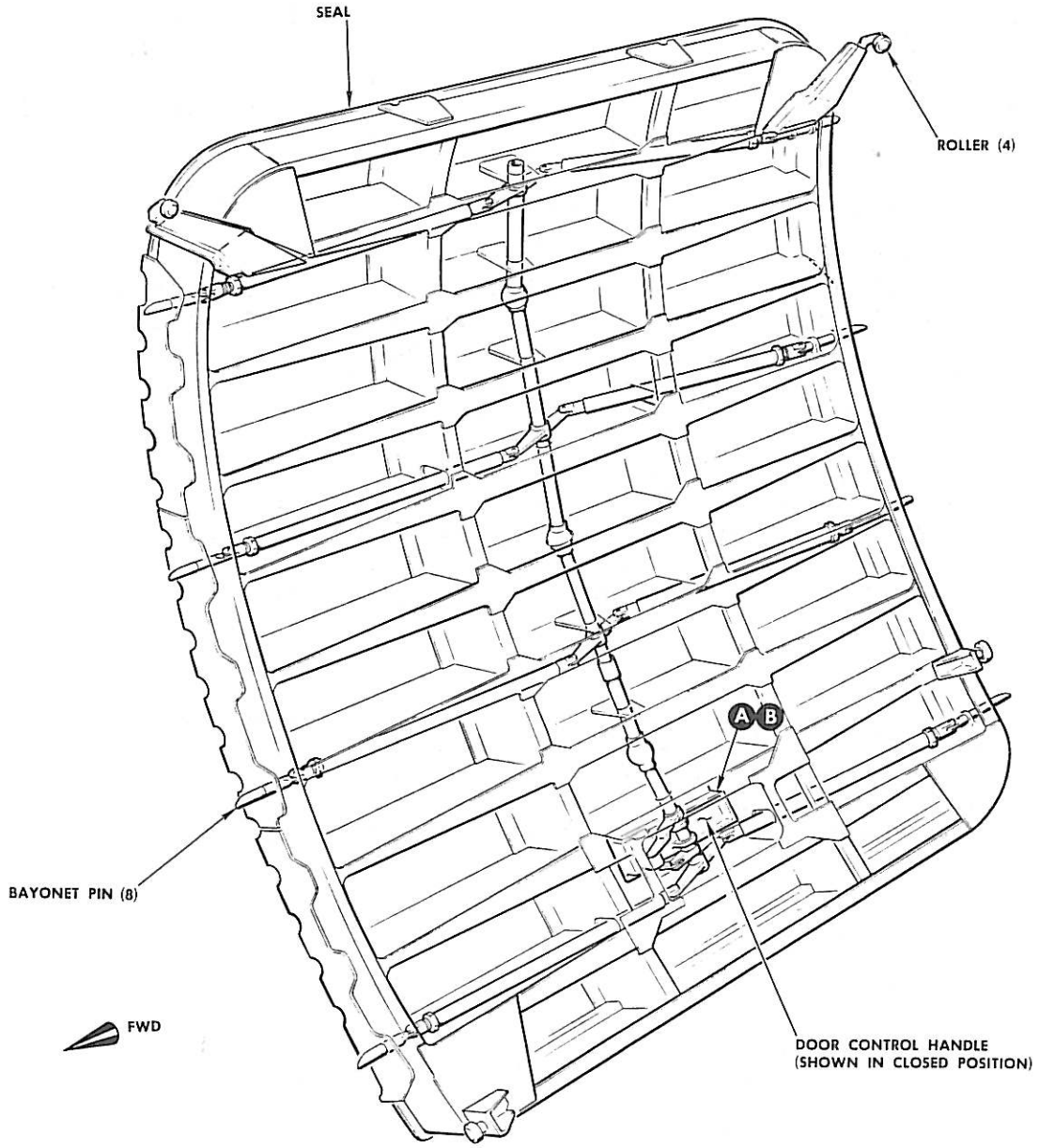
2. Structure

The cargo and baggage doors are of conventional built up rib and skin construction employing 2024 and 7075 aluminum alloy. The corners of the doors are constructed of laminated fiberglass. Basic door structure consists of a formed outer frame and outer skin with interconnecting fore-and-aft ribs. Four nylon rollers are employed for fore-and-aft movement of the door assembly.

3. Latching Mechanism

Eight bayonet latches secure each cargo door in the closed position, and four bayonet latches secure the baggage door in the closed position. A door latch control handle actuates the bayonet latch mechanism through a torque shaft, bell cranks and push-pull rods. Depressing the spring-loaded handle lock catch in the center of the door control handle allows the


A
DOOR SEAL
SPRING-LOADED
HANDLE LOCK CATCH
(SHOWN DEPRESSED)
B
BAYONET
LINKAGE
OPERATING
LATCH
DOOR CONTROL HANDLE
(SHOWN IN STOWED POSITION)


SEAL
ROLLER (4)
A
B
BAYONET PIN (8)
FWD
DOOR CONTROL HANDLE
(SHOWN IN CLOSED POSITION)

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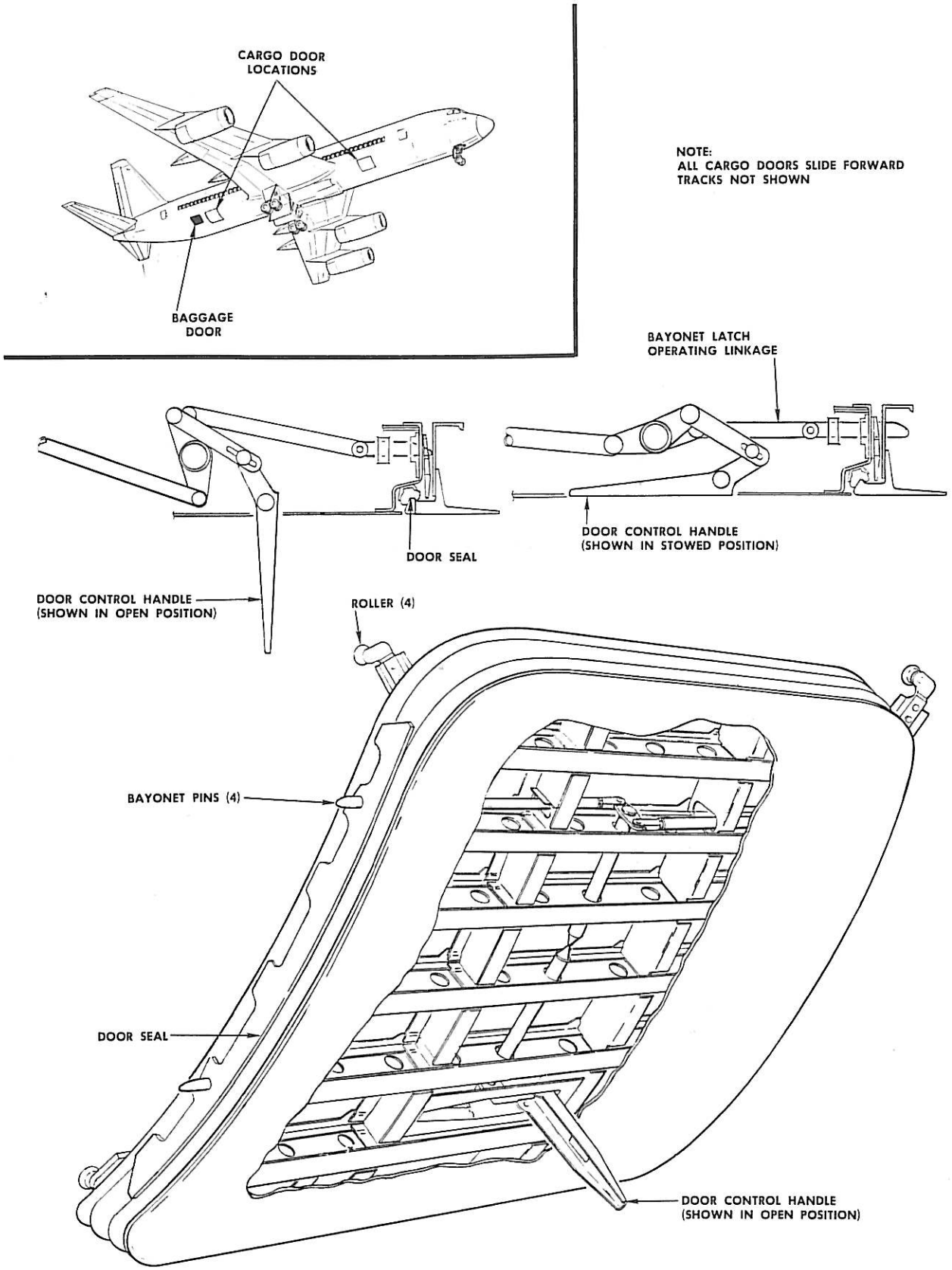

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Baggage Door
(For Airplanes Equipped With Baggage Door)
Figure 2

handle to swing out of its recess. The operator can then grasp the handle and rotate it outward 90 degrees and unlatch the door. Pushing the door inward engages the door with tracks in the fuselage. The door control handle can then be returned to the latches position, and the door is free to slide forward on tracks to clear the door opening.

4. Seal

A molded bulb-type wire-reinforced seal used on both cargo and baggage doors, energized by cabin pressure, is employed between the door and door frame. Vent holes are provided in the inboard side of this seal. Cabin pressure passes through these holes and forces the crown of the seal against the seal striker around the door opening.

The seal is constructed of tear-resistant silicone rubber, reinforced with Dacron and contains an inner and outer pressure wall. Dual wall construction is a fail-safe feature to preclude loss of pressurization in the event of unforseen damage to the outer pressure wall. The seal is also reinforced with a flexible spring steel wire, integrally molded within the seal, to eliminate the possibility of seal collapse. The internal spring wire supports the side walls of the seal against lateral pressure loads when pressurized, to assure positive alignment with the fuselage striker. The seal is vulcanized into a single one-piece unit to fit the extruded aluminum alloy seal retainer.

The seal retainer is riveted around the inside periphery of the door. The retainer consists of a formed section with two protruding lips along each side of its inner surface, near the base. These lips fit over the molded flanges along each side of the seal and retain the seal in position.

CARGO DOORS-SLIDING TYPE-REMOVAL/INSTALLATION

1. Removal/Installation Sliding Type Cargo Door (See Figure 401)

A. Equipment Required - None.

B. Remove Cargo Door.

NOTE: Bag and tag all loose parts for reinstallation.

(1) Depress PUSH button latch in center of door control handle to allow handle to swing out of recess.

NOTE: Control handle is spring loaded to swing out 15 degrees from recess when unlatched. This initial 15-degree movement does not move the door latching mechanism.

(2) Rotate control handle outward to a position perpendicular to the door.

(3) Push inward and forward on door until door is in the forward and stowed position.

(4) Remove screws securing lower edge of cargo door cover; lift cover to up position and secure.

(5) Remove two upper rollers and the forward lower roller from their mounts and remove from their tracks.

(6) Position or cock door and remove door through opening.

C. Install Cargo Door (Reinstallation of Door).

(1) With door control handle in the unlatched position, insert door through fuselage opening.

(2) Align upper rollers and bolt rollers to their mounts on door.

(3) Position lower forward roller in ramp on track carriage, align with its mount on door and install bolt. Lower aft roller will engage aft fixed ramp when door is moved aft.

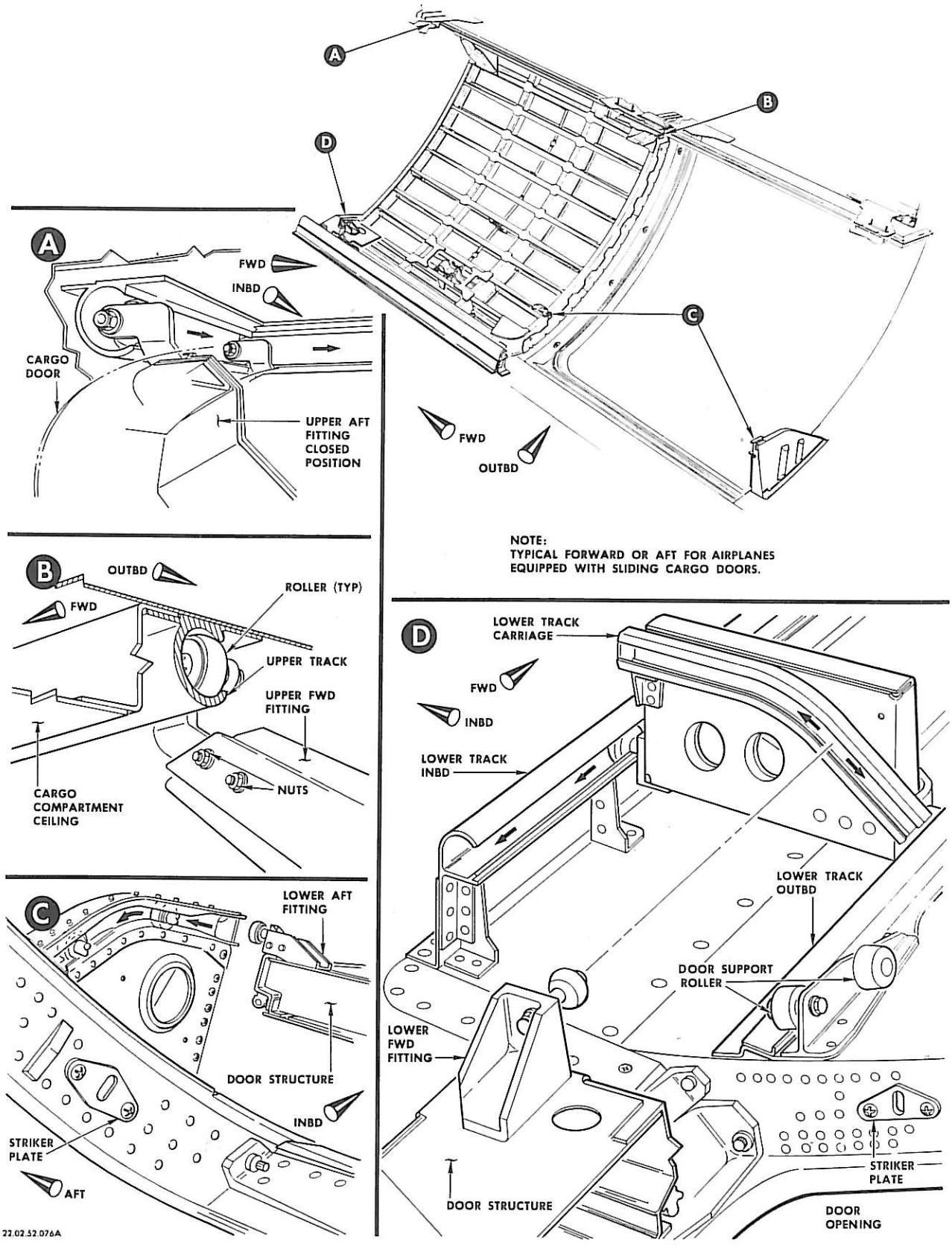
(4) Lower door cover and install screws along lower edge of cover.

(5) Position door in opening and latch door handle.

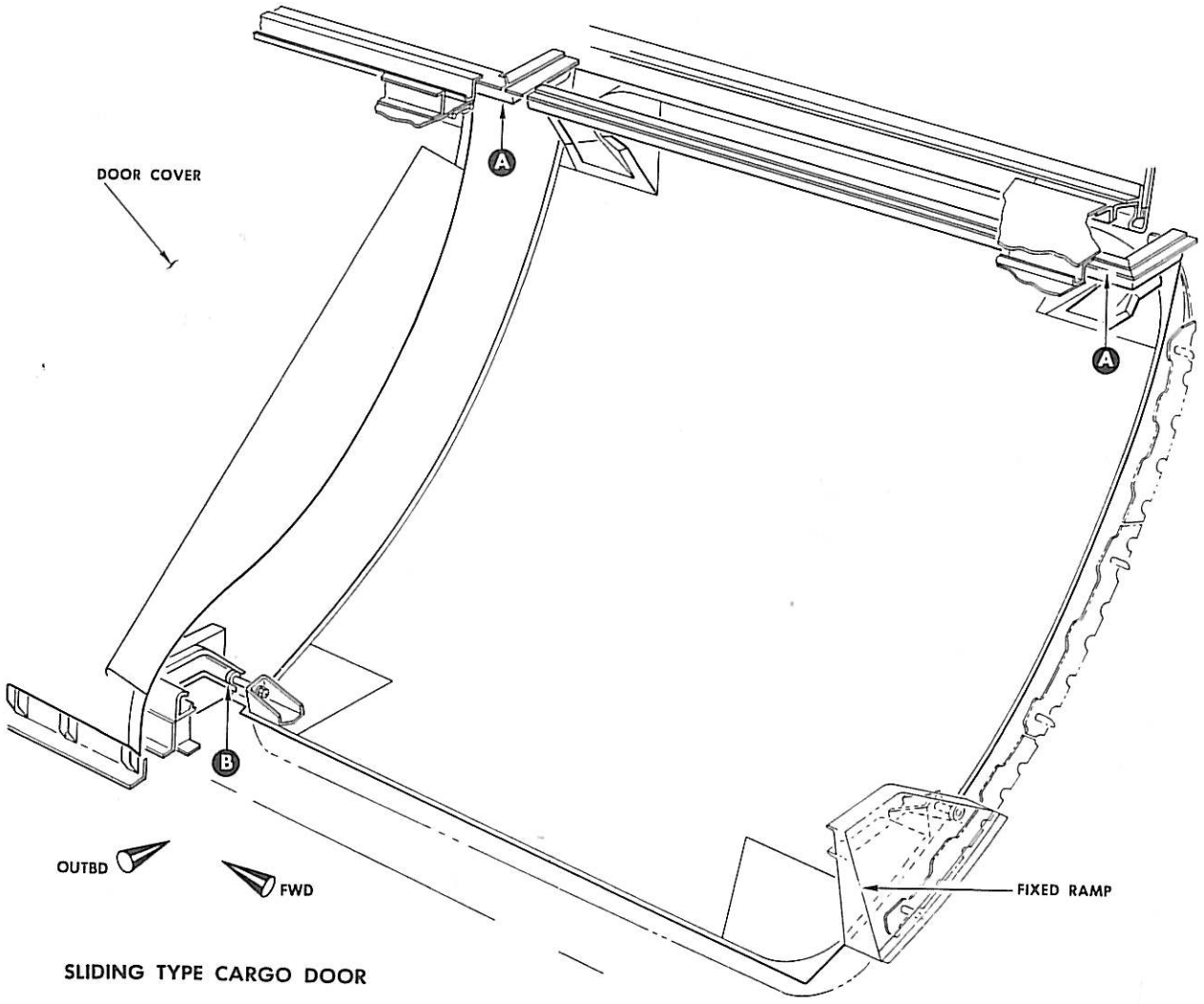
(6) For door clearance and adjustment; refer to Adjustment/Test.

D. Install Sliding Type Cargo Door (Installation of New Door, See Figure 401).

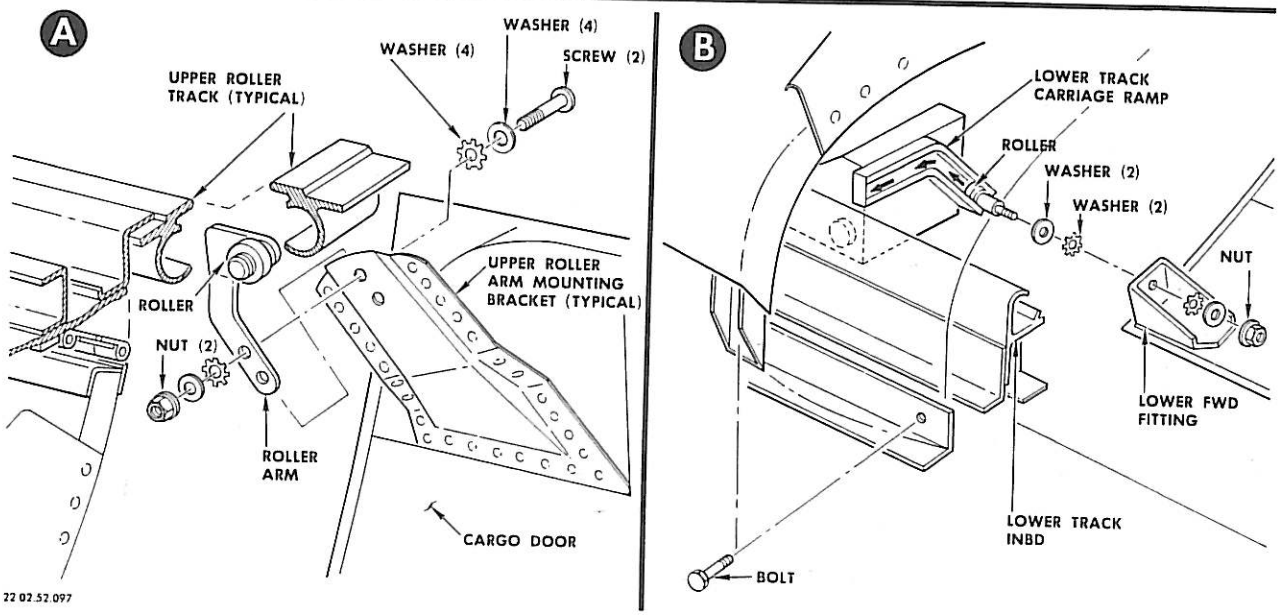
(1) Remove door pressure seal from new door. Refer to 52-0.

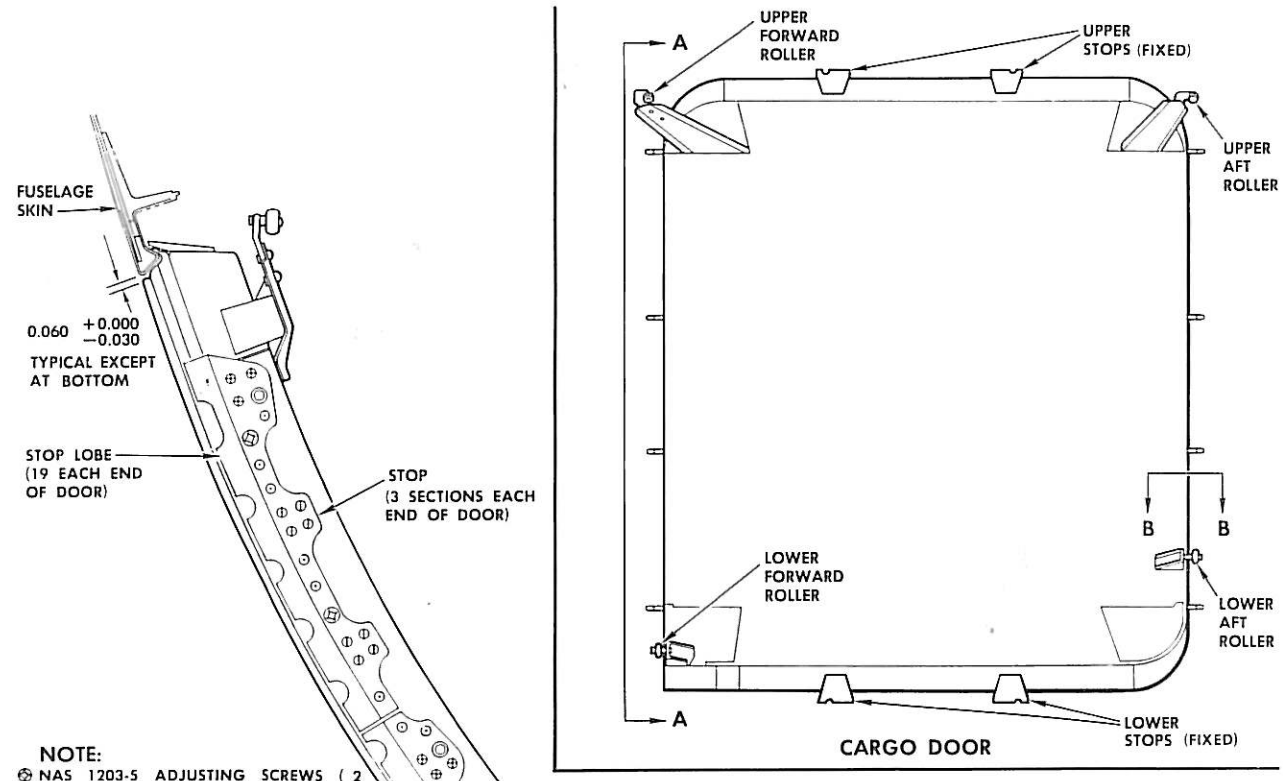


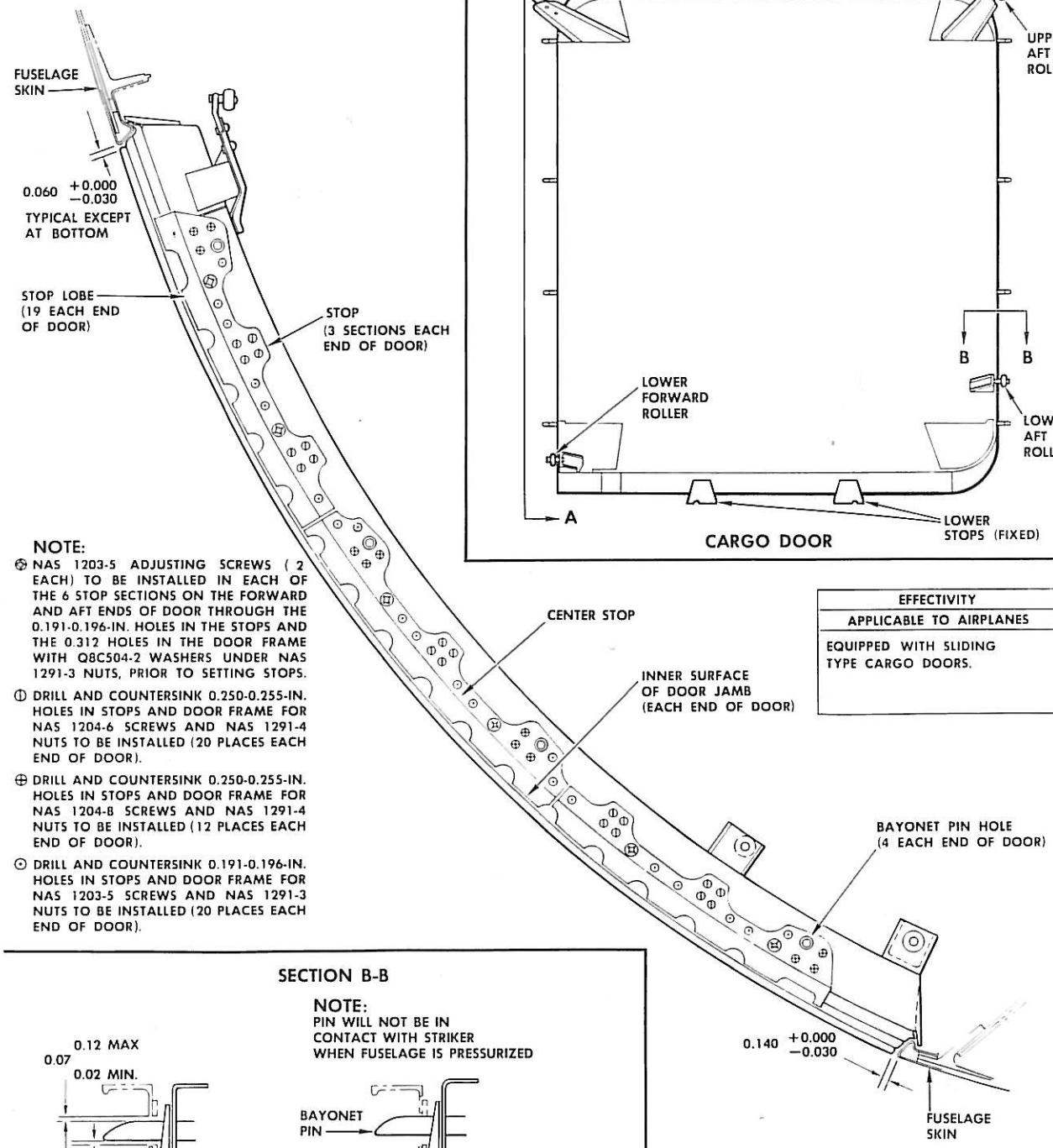
Cargo Door Installation
Figure 401 (Sheet 1 of 3)



SLIDING TYPE CARGO DOOR







NOTE:

⊛ NAS 1203-5 ADJUSTING SCREWS (2 EACH) TO BE INSTALLED IN EACH OF THE 6 STOP SECTIONS ON THE FORWARD AND AFT ENDS OF DOOR THROUGH THE 0.191-0.196-IN. HOLES IN THE STOPS AND THE 0.312 HOLES IN THE DOOR FRAME WITH Q8C504-2 WASHERS UNDER NAS 1291-3 NUTS, PRIOR TO SETTING STOPS.

Ⓘ DRILL AND COUNTERSINK 0.250-0.255-IN. HOLES IN STOPS AND DOOR FRAME FOR NAS 1204-6 SCREWS AND NAS 1291-4 NUTS TO BE INSTALLED (20 PLACES EACH END OF DOOR).

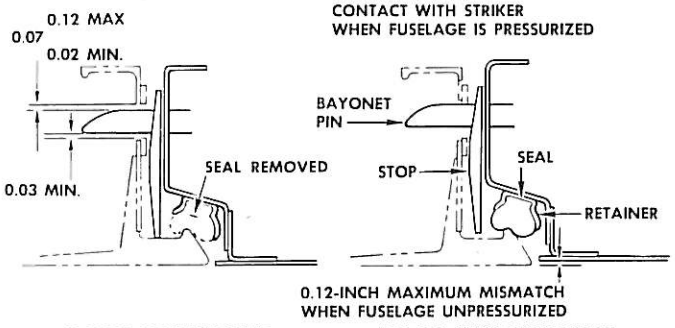
⊕ DRILL AND COUNTERSINK 0.250-0.255-IN. HOLES IN STOPS AND DOOR FRAME FOR NAS 1204-8 SCREWS AND NAS 1291-4 NUTS TO BE INSTALLED (12 PLACES EACH END OF DOOR).

⊙ DRILL AND COUNTERSINK 0.191-0.196-IN. HOLES IN STOPS AND DOOR FRAME FOR NAS 1203-5 SCREWS AND NAS 1291-3 NUTS TO BE INSTALLED (20 PLACES EACH END OF DOOR).

EFFECTIVITY
APPLICABLE TO AIRPLANES
EQUIPPED WITH SLIDING TYPE CARGO DOORS.

SECTION B-B

NOTE:
PIN WILL NOT BE IN CONTACT WITH STRIKER WHEN FUSELAGE IS PRESSURIZED



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SECTION A-A

(2) Remove roller arms from hats (roller arm mounting brackets) at foreward and aft upper corners of door.

(3) Remove lower forward roller from door.

(4) Position upper rollers in their respective tracks with attached roller arms hanging.

(5) With door control handle in the unlatched position, insert cargo door through fuselage opening.

(6) Insert upper roller arms, hanging from attached rollers, in their respective hats and install bolts without tightening nuts.

(7) Position the removed forward lower roller in its proper place in the carriage ramp and bolt it to its mount on door.

(8) Position door in door opening and trim door outer skin as necessary. Gaps between the top, forward, and aft edges of door and fuselage skin must be 0.060-inch (+0.000, -0.030). Gap between bottom edge of door and fuselage skin must be 0.140-inch (+0.000, -0.030).

NOTE: Installation of new door must be accomplished under simulated pressurized condition. This is obtained with the pressure seal removed and the door control handle in the unlatched position; by inserting door in opening and positioning door so the outer edge around periphery of door is flush with outer surface of door jamb.

(9) With door in opening, check top and bottom edge of door and outer surface of door jamb for flush contour match.

(10) If necessary, file upper two and lower two fixed stops to get proper contour of upper and lower edges of door with upper and lower outer surfaces of door jamb.

(11) Adjust each of the upper roller arms in their hats for freedom of roller operation in their respective tracks and tighten nuts on mounting bolts.

(12) Adjust aft lower roller in fixed ramp for freedom of movement in ramp and tighten nut on mounting bolt.

(13) Simulate pressurized position of door.

NOTE: The stops on the forward and aft ends of the door are in three sections. Each section is temporarily mounted on the door ends with two flush head screws through oversize mounting holes, with large washers under their nuts. The oversize holes permit the stops to be adjusted to get proper fair-in with the fuselage contour before drilling the stops and door structure (see Figure 401 for size of stop mounting screws before drilling mounting screw holes in stops and door structure).

(14) Tap inner edge of each section of stops until each lobe on the stop section touches its respective contact point on the inner surface of the door jamb.

(15) Tighten nuts on the flush head mounting screws that hold the stop sections in their places.

(16) Remove door from airplane.

NOTE: Remove two upper rollers from roller arms, instead of removing arms from hats, to avoid necessity for readjustment of upper rollers to tracks.

(17) Drill forward and aft stops and door structure with proper size drill for stop mounting screw installation (see Figure 401 for screw pattern and sizes). Ensure that mounting screw holes pickup rib attach fittings and bayonet pin fittings on the inner surface of the door structure.

(18) Attach sections of the forward and aft stops with proper screws (see Figure 401).

(19) Reinstall door pressure seal. Refer to 52-0.

(20) Reinstall door and adjust forward lower roller in carriage ramp for proper operation and tighten bolt.

(21) Swing cargo door cover down into place and install screws along lower edge.

(22) Install door interior insulation (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

(23) Adjust door-open warning microswitch; refer to 52-6-0.

(24) For door clearance and adjustment, refer to Adjustment/Test.

(25) Close door and place door handle in latched position.

2. Removal/Installation Cargo Door Pressure Seal

For removal/installation of the cargo door pressure seal, refer to 52-0.

3. Removal/Installation Cargo Door Interior Handle (see Figure 402)

A. General.

To facilitate removal of the cargo door assembly interior handle, the door assembly should be removed from the airplane as directed in Paragraph 1. Door assembly should be supported on a suitable padded stand or bench. Removal and installation procedures for both forward and aft cargo door interior handles are identical.

B. Equipment Required - None.

C. Remove Door Interior Handle.

NOTE: Bag and tag loose parts for installation.

(1) Remove cargo door interior insulation. (Refer to Chapter 25, EQUIPMENT/FURNISHINGS.)

(2) Unhook spring from handle.

(3) Remove taper and straight pins from shaft assembly, and torque tubes.

(4) Remove handle.

(5) Slide sleeve off shaft assembly and onto torque tube. Slide shaft assembly through bearing lugs to release arm, spring, and handle.

D. Install Door Interior Handle.

(1) Position handle, spring and arm in alignment with shaft assembly bearing lugs and insert shaft assembly.

(2) Install taper and straight pins.

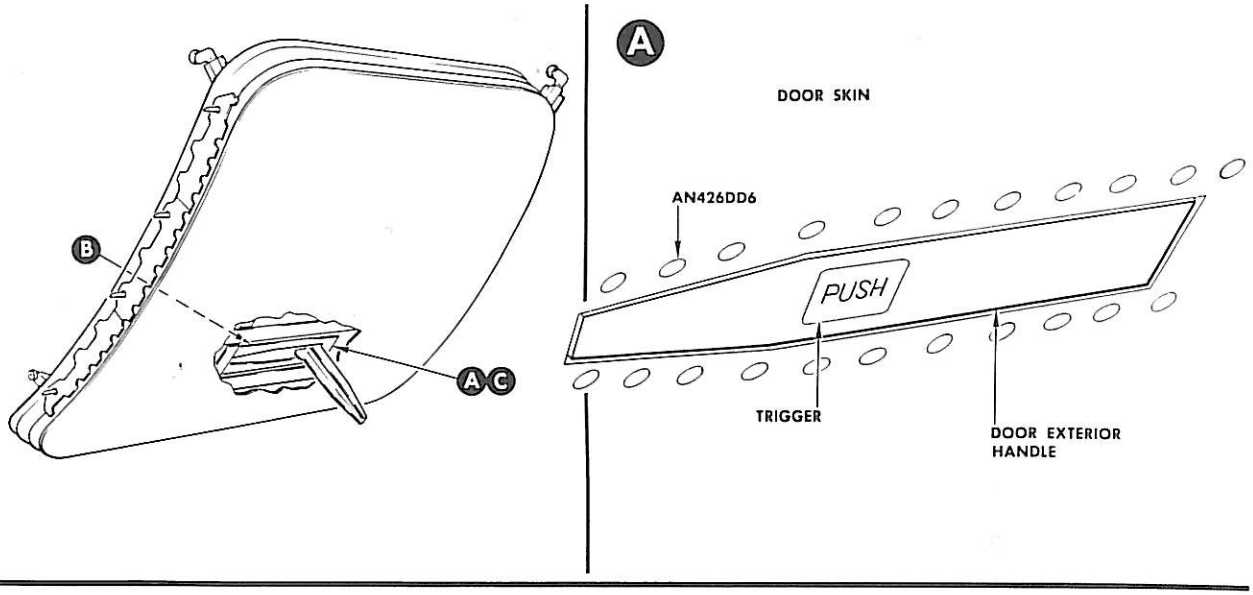
(3) Install cargo door interior insulation. (Refer to Chapter 25, EQUIPMENT/FURNISHINGS.)

(4) Install cargo door assembly as directed in Paragraph 1.

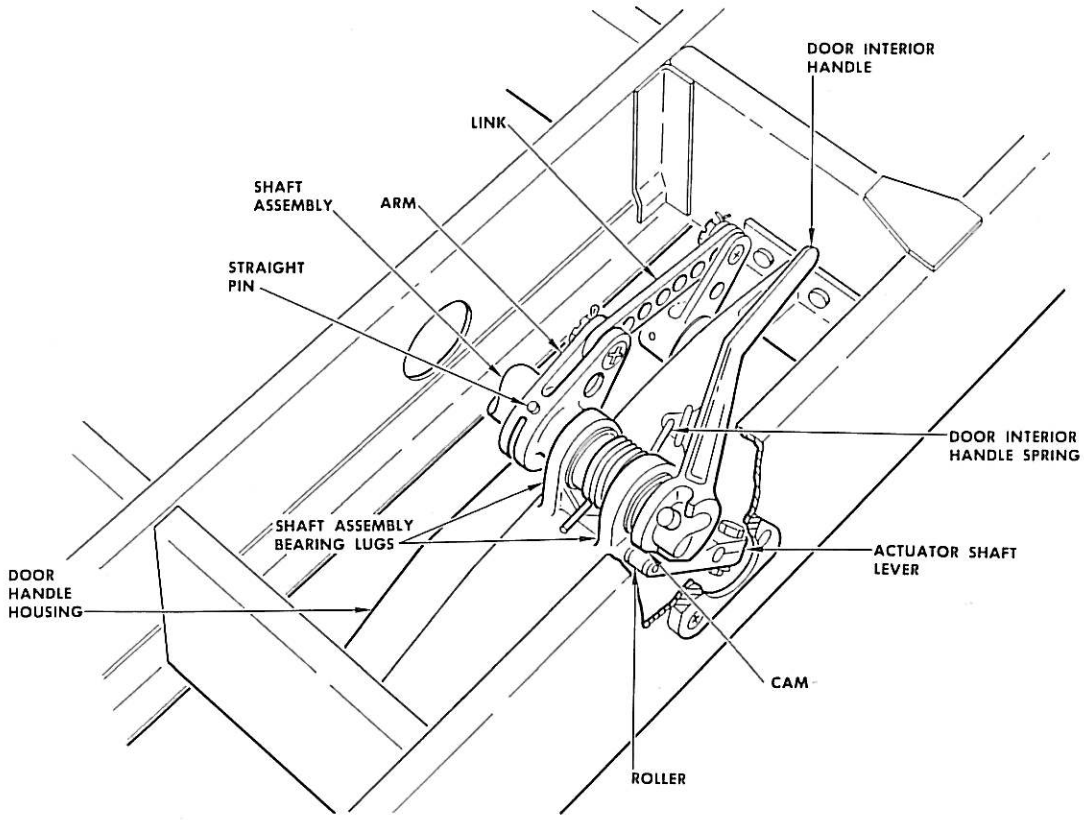
4. Removal/Installation Cargo Door Exterior Handle Assembly (see Figure 402)

A. General.

To facilitate removal of the cargo door exterior handle assembly, the door assembly should be removed from the airplane as directed in Paragraph 1. Door assembly should be supported on a suitable padded stand



B



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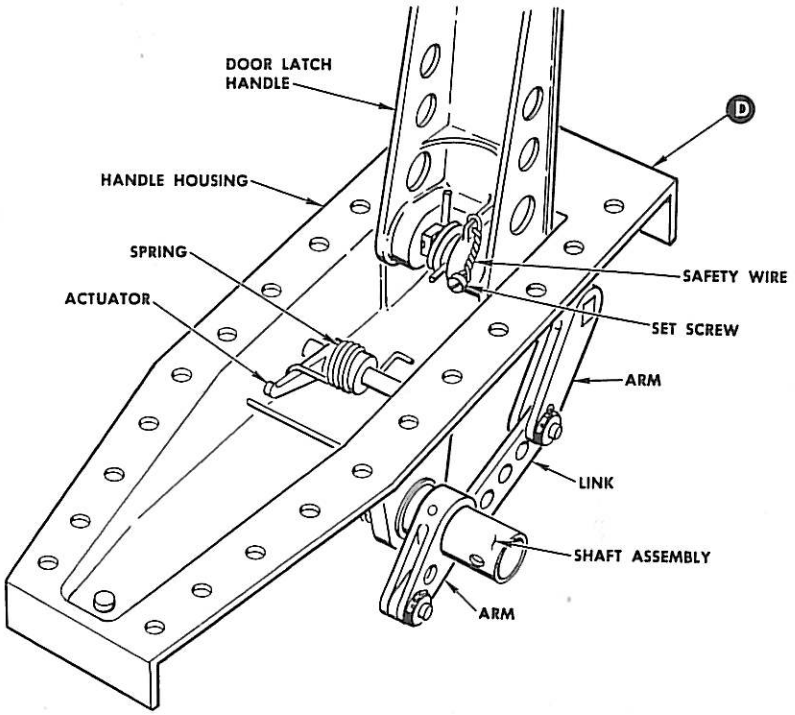
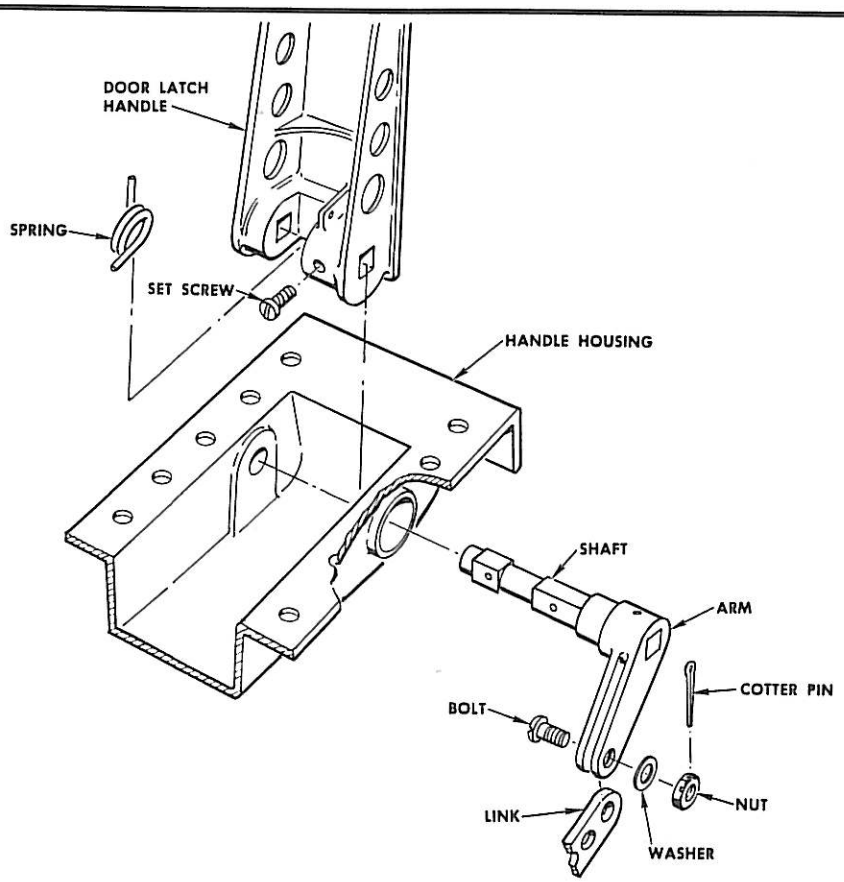
Cargo Door Handle Assembly Installation
Figure 402 (Sheet 1 of 2)

C



D



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or bench. Removal and installation procedures for both forward and aft cargo door eexterior handle assemblies are identical.

B. Equipment Required. EC 1291 Sealant.

C. Remove Cargo Door Exterior Handle Assembly.

NOTE: Bag and tag loose parts for installation.

(1) Remove cargo door interior insulation (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

(2) Remove cargo door interior handle as directed in Paragraph 3.

(3) Drill and remove rivets from handle housing and door.

NOTE: Use a No. 11 drill for rivet removal.

(4) Remove handle housing.

D. Install Cargo Door Exterior Handle Assembly.

(1) Position handle housing in door skin existing cutout for installation.

(2) If a new housing is to be installed, use existing rivet hole pattern in door, drill holes in new handle housing with a No. 11 drill. Remove burrs from drilled holes.

(3) Apply EC-1291 sealant to faying surfaces of door and handle housing as directed in Chapter 51, STRUCTURES GENERAL.

(4) Install handle housing on door with AN426DD6 rivets.

(5) Install cargo door interior handle as directed in paragraph 3.

(6) Install cargo door interior insulation (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

(7) Install cargo door assembly as directed in Paragraph 1.

5. Removal/Installation Cargo Door Exterior Handle (see Figure 402)

A. General.

To facilitate removal of the cargo door exterior handle, the door assembly should be removed from the airplane as directed in Paragraph 1. Door assembly should be supported on a suitable padded stand or bench. Removal and installation procedures for both forward and aft cargo door exterior handles are identical.

B. Equipment Required - None.

C. Remove Cargo Door Exterior Handle.

NOTE: Bag and tag loose parts for installation.

(1) Remove cargo door interior insulation (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

(2) Remove cargo door interior handle as directed in Paragraph 3.

(3) Remove cargo door exterior handle assembly as directed in Paragraph 4.

(4) With handle in open position, remove safety wire and setscrew from handle.

(5) Disconnect link from arm, noting which link hole the bolt is removed from.

(6) Remove handle by pulling shaft assembly arm from housing and spring.

D. Install Cargo Door Exterior Handle.

(1) Position handle and spring in housing.

(2) With arm and shaft assembled, insert shaft through holes in handle housing and spring.

(3) Position and align screw holes in handle and shaft.

(4) Install setscrew in handle and safety wire.

(5) Install cargo door exterior handle assembly as directed in Paragraph 4.

(6) Install cargo door interior handle as directed in Paragraph 3.

(7) Using same adjustment hole in link, from which bolt was removed, connect link to arm by installing bolt, washer, nut, and cotter pin.

6. Removal/Installation Cargo Compartment Door Control Handle Linkage (see Figure 403)

A. Equipment Required - None.

B. Remove Door Control Handle Linkage.

NOTE: Bag and tag all loose parts for ease of reinstallation.

(1) Remove cargo door interior insulation. (Refer to Chapter 25, EQUIPMENT/FURNISHINGS.)

(2) Remove clevis and taper pins from bayonet pin linkage bell cranks (three places) on control handle torque tubes.

(3) Remove all taper pins from torque tubes, coupling sleeves and universal joints.

(4) Remove three bolts attaching phenolic bearing at upperend of torque tubes.

NOTE: Phenolic bearings are not interchangeable or reversible; identify bearings for reinstallation.

(5) Slide torque tubes toward top of door and remove universal joints (three places).

(6) Slide couplings over torque tubes, remove torque tubes, couplings, and bayonet pin linkage bell cranks from door.

C. Install Door Control Handle Linkage.

NOTE: When installed, small end of taper pin shank shall be flush to 0.060 inch.

(1) Starting at lower end of door, position torque tubes in door, sliding couplings and bayonet pin linkage bell cranks into position as required.

(2) Install universal joints on torque tubes (three places) using taper pins.

(3) Install phenolic bearing at upper end of torque tubes, using three bolts.

(4) Install couplings and bayonet pin linkage bell cranks to torque tubes, using taper pins.

(5) Install bayonet pin linkage to bayonet pin linkage bell cranks, using clevis pins and cotter keys (eight places).

(6) Install cargo door interior insulation. (Refer to Chapter 25, EQUIPMENT/FURNISHINGS.)

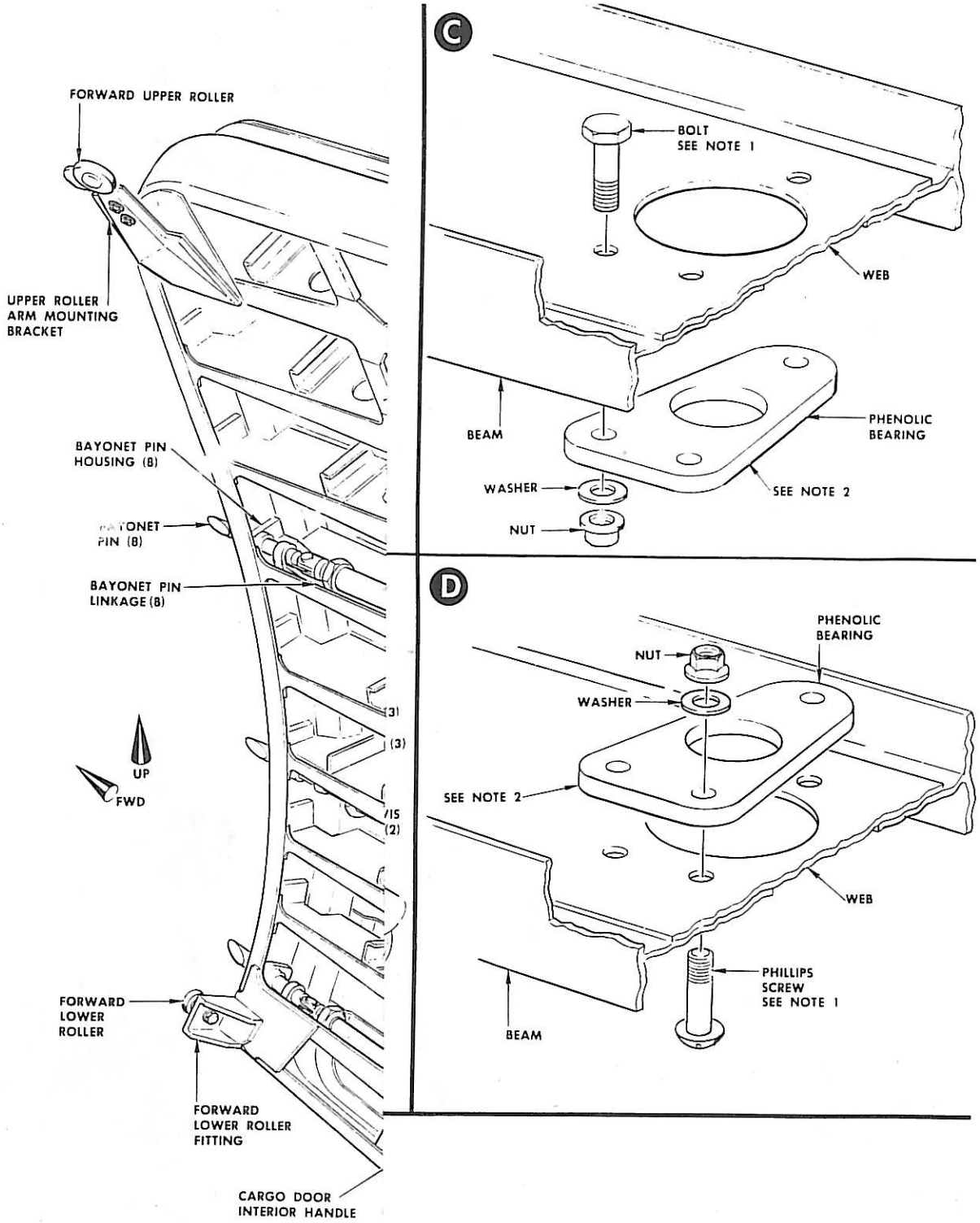
7. Removal/Installation Bayonet Pin Linkage (see Figure 403)

A. Equipment Required - None.

B. Remove Bayonet Pin Linkage.

(1) Remove cotter key and clevis pin from bayonet pin linkage bell crank.

(2) Remove linkage by sliding bayonet pin from bayonet pin housing.



ITH BOLT AND SCREW HEADS ON
AM FROM BEARING.
N OPPOSITE SIDE OF BEAM FROM
PIN BELL CRANK. BOLT HEADS
ANK SIDE OF BEAM.
AIRPLANES EQUIPPED WITH
DOOR.

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C. Install Bayonet Pin Linkage.

(1) Install linkage by sliding bayonet pin into bayonet pin housing.

(2) Install clevis pin on bayonet pin linkage bell crank and cotter key.

(3) Adjust door control handle linkage; refer to Adjustment/Test.

CARGO DOORS, FORWARD AND AFT - ADJUSTMENT/TEST

1. Adjustment/Test Door Fair-in and Latch (see Figure 501)

A. General.

NOTE: The adjustment/test procedures for the forward and aft cargo doors are identical.

B. Equipment Required - None.

C. Procedure.

(1) Remove door interior insulation. (Refer to Chapter 25, EQUIPMENT/ FURNISHINGS.)

(2) With the cargo door closed and the door control handle in the closed and locked position, check the following:

(a) The eight bayonet pins shall engage their receptacles.

(b) A nominal dimension of 3.30 inches shall be measured from edge of door frame to center of attach pin connecting each push-pull rod to each of the eight bayonet pins. Adjust length of push-pull rod at each bayonet pin to obtain nominal dimension.

(3) Check for the following clearances:

(a) Gap at top, forward and aft edges of door between fuselage skin and door shall be 0.060 inch and 0.140 inch along bottom edge of door (+0.000, -0.030) inch; trim edge of door skin as required.

(b) Mismatch between door and fuselage skin shall not exceed 0.120 when fuselage unpressurized.

(c) Mismatch between door and fuselage skin shall not exceed 0.060 (+0.000, -0.030) inch when fuselage pressurized to 8.2 psi as directed in Chapter 21, AIR CONDITIONING.

(d) Stops along forward and aft sides of door must contact door frame along each side.

NOTE: During installation of forward and aft stops, there are two bolts on each stop that are adjustable. After all bolts are installed and stop installation is complete, stops cannot be adjusted.

(e) For up and down adjustment of door, bayonet pin receptacles on forward and aft door frames are adjustable.

(f) For forward and aft adjustment of door, sand or shim phenolic blocks (two places) on forward and aft door frames.

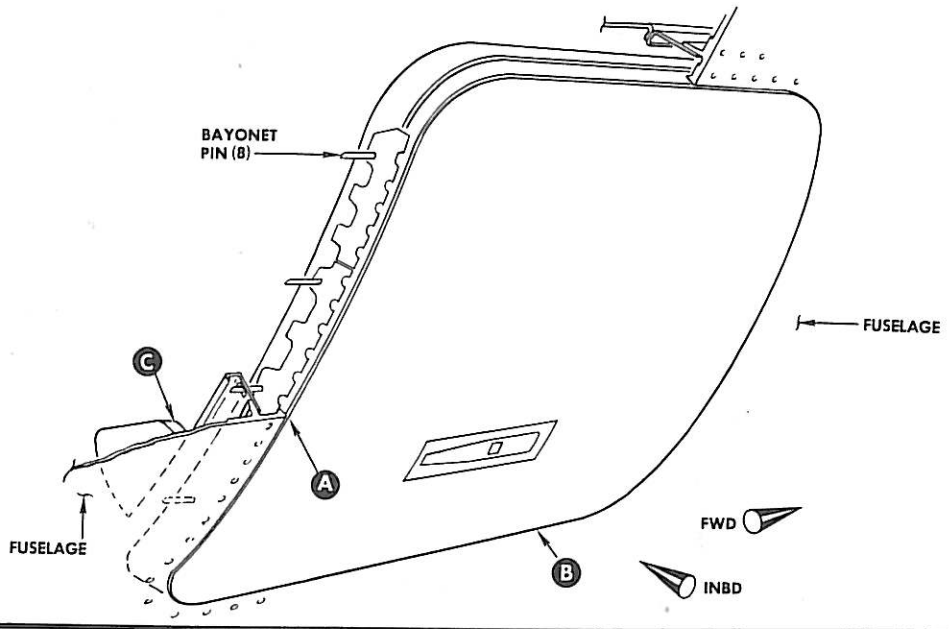
(g) Gap between stops and points of contact may increase 0.001 inch per inch, up to 0.005 inch maximum. Gap at the stops on top and bottom of door must not be less than gap at each end of the forward and aft door stops.

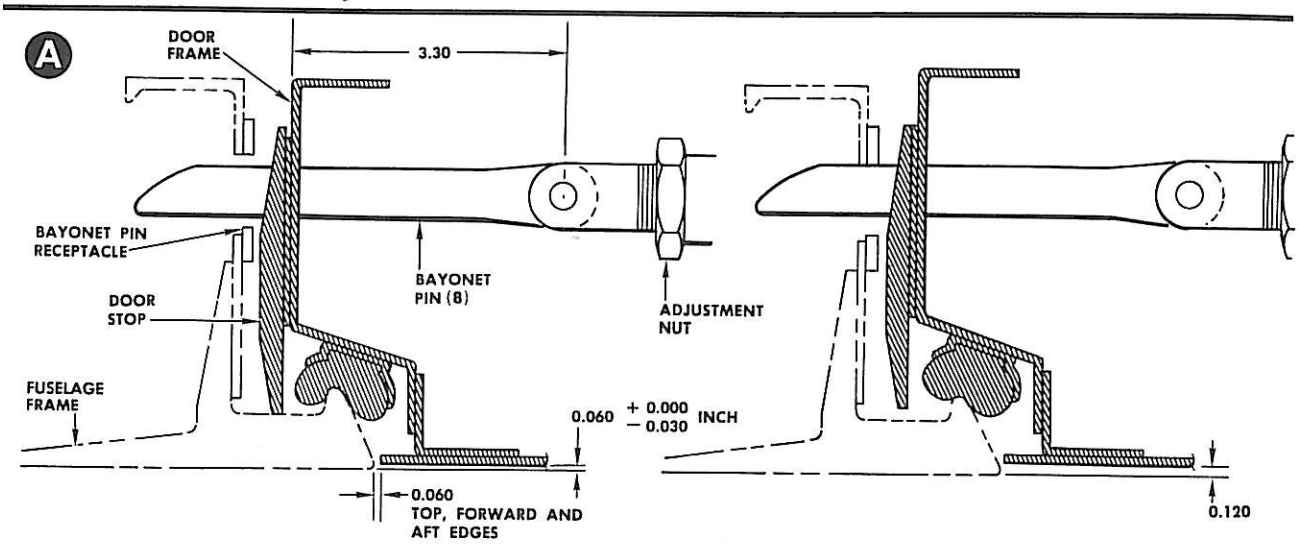
NOTE: Stop contact may be checked by placing masking tape along stop contact surfaces of door frame and the hinge arms, and marking the edge of the stops with a grease pencil. When the door is closed the grease pencil markings will leave an imprint at points of contact.

(h) When the door is opened and closed, the bayonet pins shall clear the door frame. If bayonet pins do not clear door frame, readjust length of bayonet pin push-pull rods as required.

(4) Replace door interior insulation. (Refer to Chapter 25, EQUIPMENT/ FURNISHINGS.)

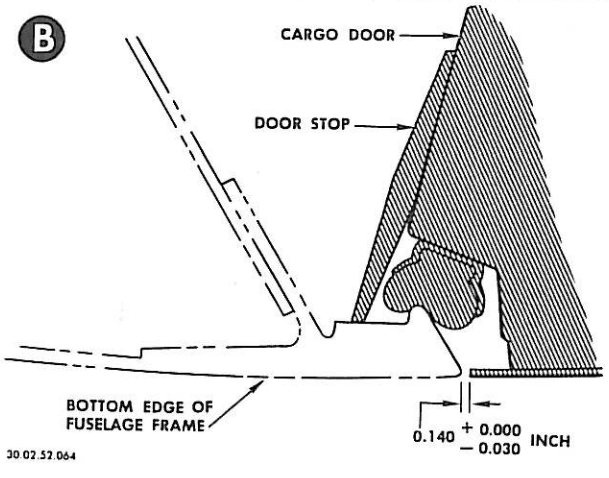
(5) Adjust door-open warning microswitch; refer to 52-6-0.

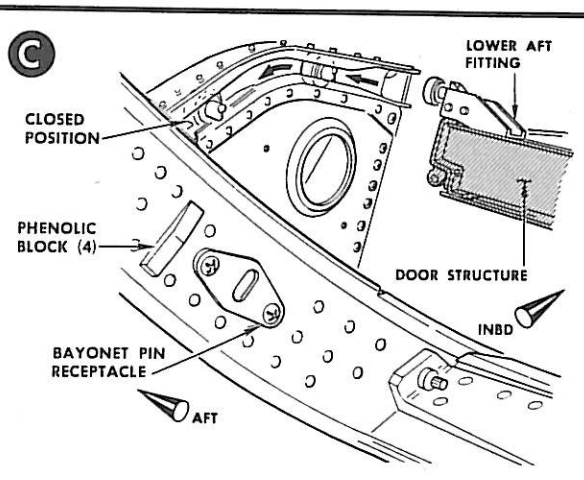




FUSELAGE PRESSURIZED

FUSELAGE UNPRESSURIZED





CARGO DOORS - INSPECTION/CHECK

1. Inspection/Check Cargo Doors

   A. Check for the following:

      (1) Cracks and corrosion on door internal and external skins and structure.

      (2) Loose and/or missing fasteners.

      (3) Cracks, corrosion, excessive abrasion, and loose or missing bolts on door frame bayonet pin receptacles.

      (4) Bayonet pins for excessive wear; ascertain that bayonet pins are not bent.

      (5) Cracks, tears, cuts, and excessive abrasion of door seal. Check that seal is properly installed in seal retainer and that seal contacts door frame around entire periphery of door.

      (6) Opening and closing operation of door to assure that latching mechanism, bayonet pins, and hinges are not binding.

      (7) Check rollers for security, corrosion, and freedom of movement.

      (8) Check for the following clearances:

         (a) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch.

            NOTE: Pressurize fuselage to 8.2 psi as directed in Chapter 21, AIR CONDITIONING.

         (b) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

         (c) Longitudinal mismatch between door and fuselage skin shall not exceed 0.030 inch.

CARGO DOORS, FORWARD AND AFT - APPROVED REPAIRS

1. Repair Procedure - Interior Handle Trigger Release Actuator Pin (see Figure 801)

   A. General

      Replace sheared spirol pin, securing the trigger release actuator to its shaft with a steel rivet as directed in the following procedure.

   B. Equipment Required.

      Q-4310C3-9 Corrosion Resisting Flathead Steel Rivet 3/32 inch diameter x 9/16 inch long.

   C. Procedure.

      (1) Unhook TRIGGER RELEASE ACTUATOR SPRING from TRIGGER RELEASE ACTUATOR and slide off actuator onto shaft to expose ends of SPIROL PIN.

      (2) Unhook DOOR INTERIOR HANDLE SPRING from INTERIOR HANDLE.

      (3) Loosen bolt on ACTUATOR SHAFT LEVER.

      (4) Rotate ACTUATOR SHAFT to most suitable position for removing SPIROL PIN.

      (5) If pin holes in actuator and shaft are aligned, remove SPIROL PIN using drift punch.

      (6) If pin holes in actuator and shaft are misaligned, drill sheared pin portion from each side of actuator with a No. 42 drill. Slide actuator on shaft to expose sheared pin portion remaining in shaft and remove with a drift punch.

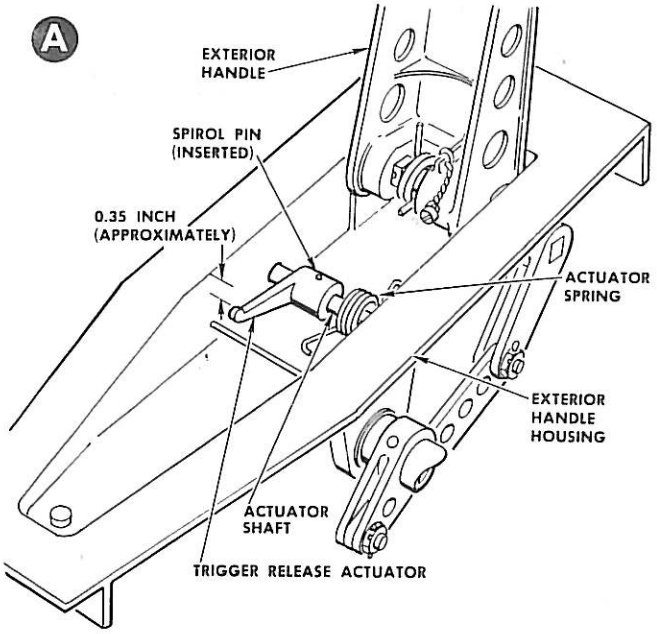
      (7) Prepare Q4310C3-9 rivet as follows:

         (a) Hollow-out shank end of rivet to a depth of approximately 3/32 inch with No. 50 drill, so rivet may be flared after installation.

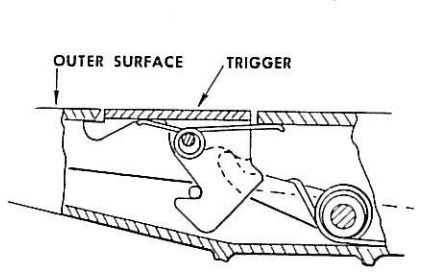
         (b) File head of rivet so ACTUATOR SPRING will clear handle housing when it is positioned over rivet. See detail on Figure 801.

      (8) Ream holes in actuator and shaft with No. 42 drill to allow rivet to be installed.

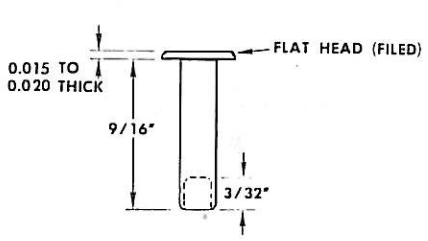
      (9) Aligh holes in actuator and shaft. Insert rivet and flare the hollowed end of rivet.



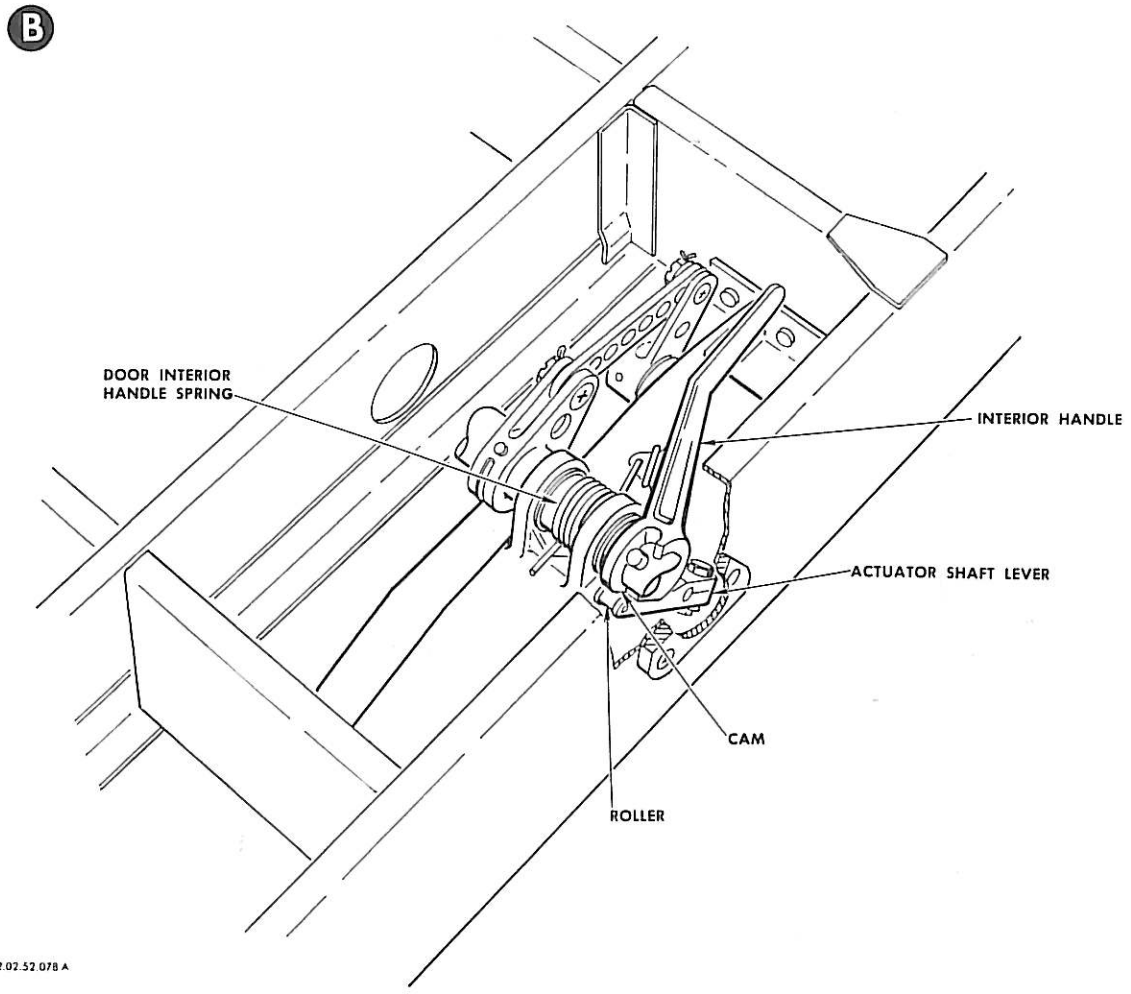
DOOR HANDLE – OPEN POSITION



DOOR HANDLE – CLOSED POSITION



Q4310C3-9 RIVET PREPARATION



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Cargo Door Interior Handle Trigger Release Actuator Pin Repair
Figure 801

(10) Adjust ACTUATOR SHAFT LEVER as follows:

(a) Position DOOR INTERIOR HANDLE in its normal down position and adjust actuator shaft lever bolt sufficiently tight to allow the ACTUATOR SHAFT LEVER to be rotated by applying enough pressure to slip the splines of the shaft lever over those of the shaft.

(b) Hold ROLLER of ACTUATOR SHAFT LEVER in contact with CAM on DOOR INTERIOR HANDLE and move actuator until tip of hook on actuator is approximately 0.35 inch below outer surface of EXTERIOR HANDLE HOUSING, as shown on Figure 801.

(c) Tighten bolt on shaft lever sufficiently to prevent shaft from turning in shaft lever.

(d) Check that TRIGGER is flush with handle housing. If trigger is not flush, actuator hook tip is too close to outer surface of handle housing. Loosen actuator lever bolt and adjust as necessary.

(e) If trigger will not latch, actuator hook tip is too far below outer surface of handle housing. Loosen actuator lever bolt and adjust as necessary.

(f) When final adjustment is completed, tighten actuator lever bolt.

GROUND SERVICING ACCESS DOORS - DESCRIPTION AND OPERATION

1. General

A number of miscellaneous outward opening ground servicing doors (see Figure 1) are provided throughout the fuselage structure. These outward opening doors consist of the external power receptacle door, fresh water filler door, lavatory service doors, ground turbine compressor connection door, and the tow power receptacle door. An internal formed pan isolates each of the ground servicing doors from the pressurized areas of the fuselage. The ground servicing doors have no seals.

2. External Power Receptacle Door

The external power receptacle door is located on the lower right side of the fuselage at station 365. It is a rectangular plate of sheet aluminum alloy approximately 7 x 9 inches in size. The door is attached to the fuselage with a piano-type hinge (spring-loaded to open) along the forward edge and is secured in the closed position by four Camloc fasteners.

3. Fresh Water Filler Door

The fresh water filler door is located on the lower right side of the fuselage at station 650 just forward of the wing. The door is a rectangular plate of sheet aluminum alloy measuring approximately 7.5 x 8.5 inches in size. The door is attached to the fuselage with a piano-type hinge (spring-loaded to open) along the forward edge and retained in the closed position by four Camloc fasteners.

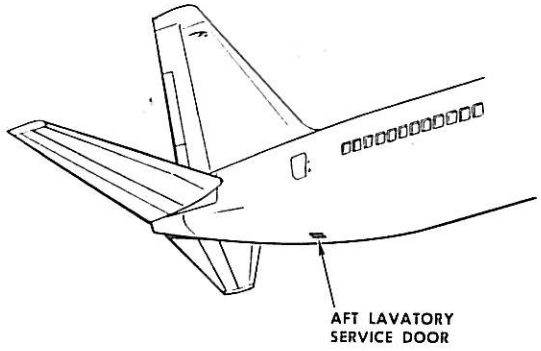
4. Forward and Aft Lavatory Service Doors

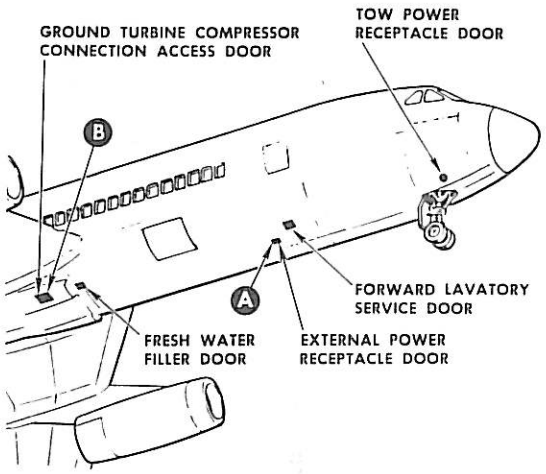
The forward lavatory service door is located on the right-hand exterior of the fuselage at station 350, just below the forward main entrance door. This door is a rectangular plate of sheet aluminum alloy measuring approximately 12.5 x 13.75 inches. The door has a piano-type hinge (spring-loaded to open) on its forward side and is held in the closed position with four Camloc fasteners.

The aft lavatory service door is located on the bottom centerline of the fuselage at fuselage station 1445. This door is similar to the forward lavatory service door in size, construction and attachment.

5. Ground Turbine Compressor Connection Door

The ground turbine compressor connection door is located at station 670 on the lower right side of the fuselage just aft of the fuselage ram air scoop. This connection is enclosed by a plate-type aluminum alloy door with a piano-type hinge (spring-loaded to open) at its forward edge and secured by three Hartwell fasteners. The door, which is circular in shape, is approximately nine inches in diameter.





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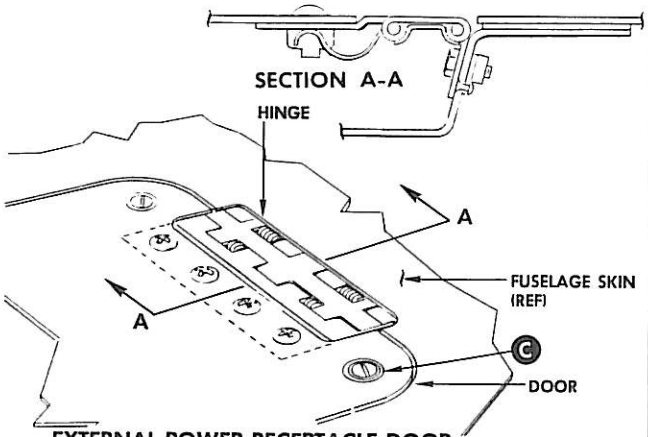
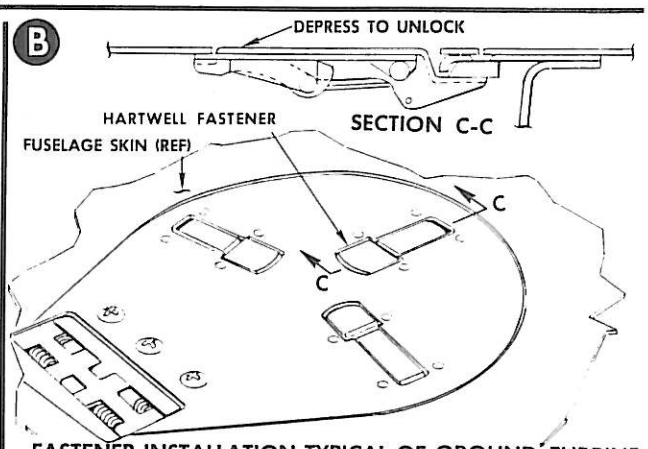


EXTERNAL POWER RECEPTACLE DOOR—
TYPICAL OF DOORS WITH SPRING-LOADED HINGES

B



FASTENER INSTALLATION TYPICAL OF GROUND TURBINE
COMPRESSOR CONNECTION ACCESS DOOR

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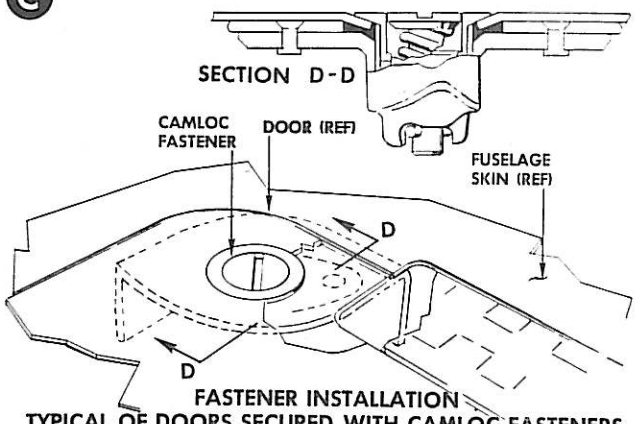

FASTENER INSTALLATION
TYPICAL OF DOORS SECURED WITH CAMLOC FASTENERS

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6. Tow Power Receptacle

The tow power receptacle door is located on the lower right side of the fuselage at station 199. It is a plate of sheet aluminum alloy 7.7 x 8.5 inches in size. The door is attached to the fuselage with a piano-type hinge (spring-loaded to open) along the forward edge and retained in the closed position by three Hartwell fasteners.

GROUND SERVICING DOORS - MAINTENANCE PRACTICES

1. Removal/Installation Ground Servicing Doors

A. General.

The removal and installation procedures for the ground servicing doors are identical except for number of screws and bolts used at hinge attachment and number of Camloc or snap-lock fasteners used.

B. Equipment Required - None.

C. Remove Ground Servicing Access Door-Typical.

(1) Release the Camloc or snap-lock fasteners (as applicable) around edge of door.

(2) Open door and remove screws and nuts at hinge attachment; remove door.

D. Install Ground Service Access Door-Typical.

(1) Position door so that screw holes in door align with attach holes in hinge and install screws and nuts.

(2) Close door and secure Camloc or snap-lock fasteners (as applicable).

(3) Check that the following conditions exist:

(a) Gap between door and fuselage skin shall be 0.060 (+0.000, -0.030) inch; trim door as required.

NOTE: Pressurize fuselage to 8.2 psi as directed in Chapter 21, AIR CONDITIONING.

(b) Transverse mismatch shall not exceed 0.020 inch.

(c) Longitudinal mismatch shall not exceed 0.030 inch.

2. Inspection/Check Ground Servicing Doors

A. Check the following:

(1) Doors for cracks and corrosion.

(2) Cracks and corrosion around area of door in fuselage structure.

(3) Broken door hold-open spring at door hinge (if installed).

(4) Door fasteners for damage, excessive wear and/or corrosion.

(5) Door fasteners for proper engagement.

B. Check the following clearances:

(1) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch.

NOTE: Pressurize fuselage to 8.2 psi as directed in Chapter 21, AIR CONDITIONING.

(2) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

(3) Longitudinal mismatch between door and fuselage skin shall not exceed 0.030 inch.

EQUIPMENT COMPARTMENT DOORS - DESCRIPTION AND OPERATION

1. General

The equipment compartment doors are comprised of both inward and outward opening doors. The inward opening doors are located in the pressurized areas of the fuselage and consist of the electrical compartment doors, electronic compartment door, hydraulic compartment door, and the nose wheel well door. Also included is the nose landing gear down-lock inspection door on the aft side of the nose wheel well. All the inward opening doors except for the nose landing gear down-lock inspection door, have self-energizing bulb-type seals and bayonet-type latching mechanisms. The nose landing gear down-lock inspection door has a bead-type rubber seal bonded around its mating surface and the door is secured with screws.

The outward opening equipment compartment doors are located in unpressurized areas of the fuselage. These doors consist of the air conditioning and pressurization compartment doors and the aft fuselage doors. Except for the two forward pair of air conditioning and pressurization compartment doors (cabin turbocompressor and heat exchanger access doors), only hinge seals are provided. The two forward pair of air conditioning and pressurization compartment doors have rubber beaded aluminum alloy strips around their periphery for sealing purposes. Camloc fasteners secure all outward opening equipment compartment doors in the closed position.

EQUIPMENT COMPARTMENT DOORS - MAINTENANCE PRACTICES

1. Removal/Installation Equipment Compartment Door Control Handle Linkage (see Figure 201)

NOTE: The replacement procedures for the electrical "tunnel", electronic, and hydraulic compartment door control handle linkages are similar; therefore, one replacement procedure is given here and is applicable to the above doors.

A. Equipment Required - None.

B. Remove Door Control Handle Linkage.

(1) Remove cotter key and clevis pin from latch handle end of linkage.

(2) Remove linkage by sliding bayonet pin from bayonet pin housing.

C. Install Door Control Handle Linkage.

(1) Install linkage by sliding bayonet pin into bayonet pin housing.

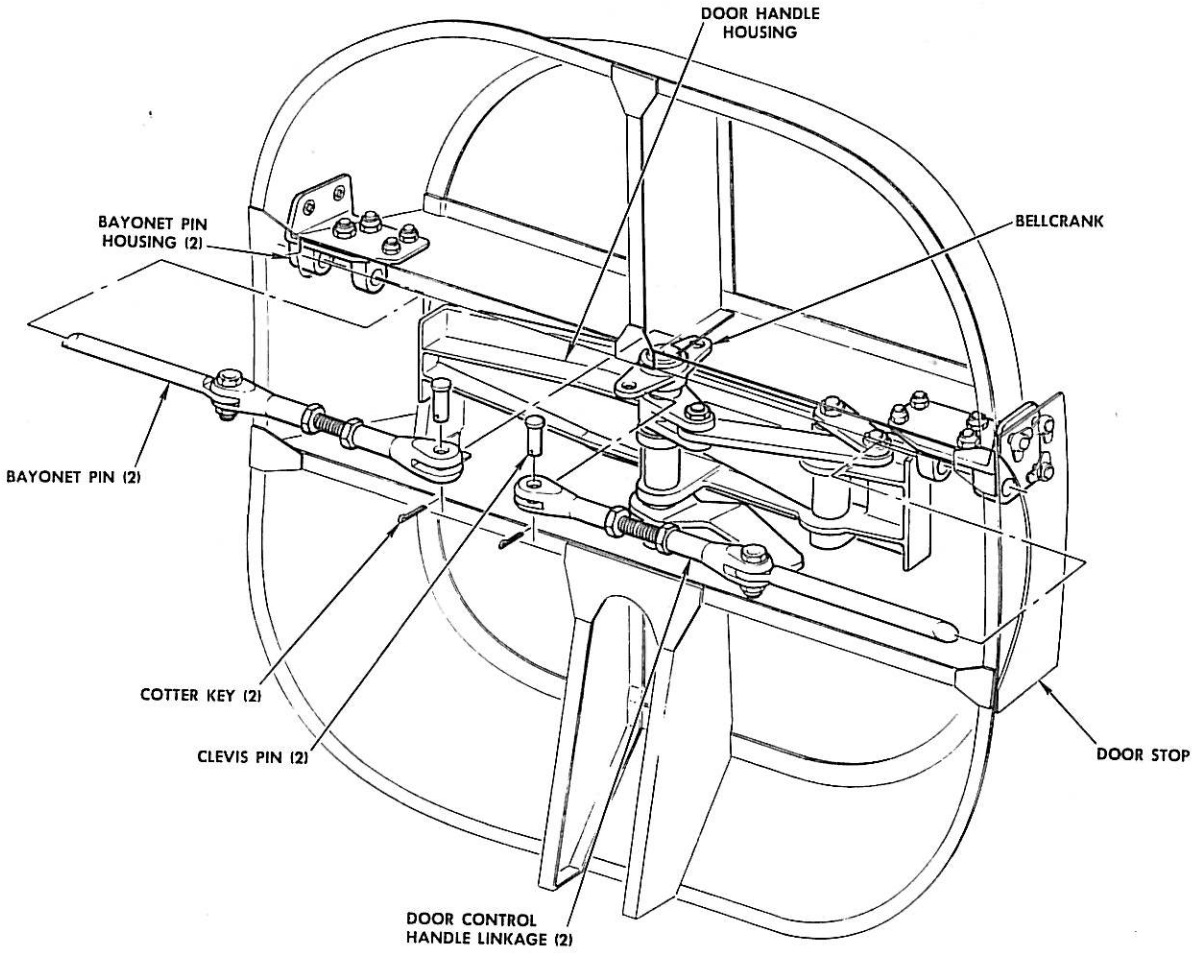
(2) Install clevis pin and cotter key on latch handle end of linkage.

(3) Adjust door control handle linkage; refer to applicable section for Adjustment/Test.

(a) Electrical compartment "tunnel" doors - Section 52-4-1.

(b) Electronic compartment door - Section 52-4-2.

(c) Hydraulic compartment door - Section 52-4-3.



NOTE:
ELECTRICAL COMPARTMENT "TUNNEL" DOOR SHOWN;
ELECTRONIC AND HYDRAULIC COMPARTMENT DOORS
ARE SIMILAR.

22.02.52.081

Equipment Compartment Door Control
Handle Linkage Installation
Figure 201

ELECTRICAL COMPARTMENT "TUNNEL" DOORS - DESCRIPTION AND OPERATION

1. Description

The electrical compartment "tunnel" doors are located on the left and right side at fuselage station 220. These doors are inward opening plug-type doors, approximately 16 x 18 inches in size and hinged at the lower edge by an adjustable breakaway type hinge. The doors are secured in the closed position by two bayonet-type latch pins which, in the locked position, extend from the forward and aft edges of the door into the door frame. See Figure 1 for an illustration of the electrical compartment doors and their location.

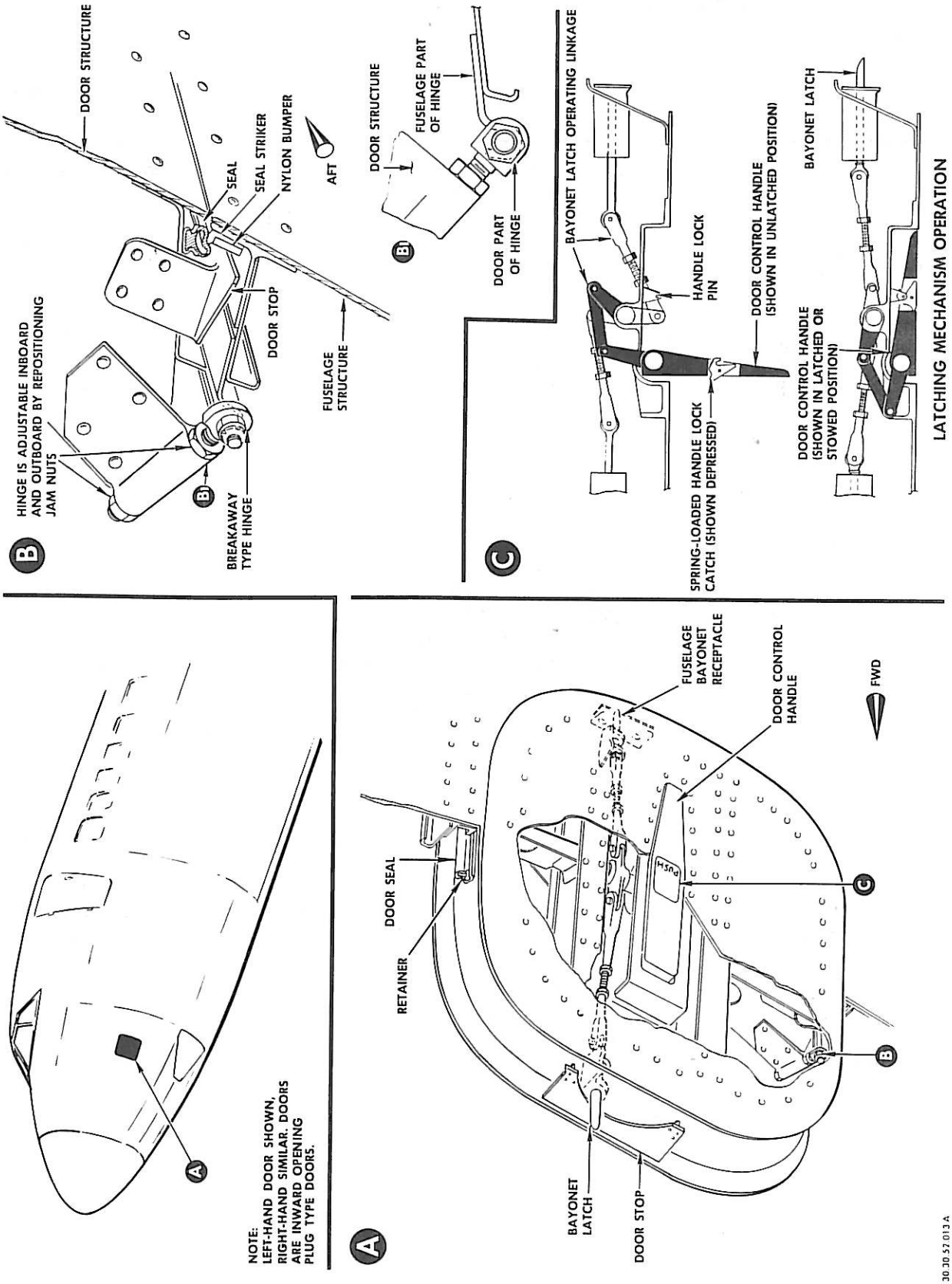
The doors are of conventional built-up rib and skin construction employing 2024 and 7075 aluminum alloy material. The door structure consists of a formed outer frame and a chemically milled outer skin with interconnecting fore-and-aft ribs. Heavy aluminum alloy stops are provided at the forward and aft edges of the door; smaller stops are provided at the upper and lower edges of the door.

A. Latching Mechanism.

Bayonet-type latches secure the doors in the closed position. The door latch control handles are recessed flush with the fuselage contour when the door is closed. The control handles actuate the bayonet latch mechanism through a system of levers and push-pull rods. Depressing a small button in the middle of the door handle releases a spring-loaded handle lock catch and allows the handle to swing out of its recess approximately 15 degrees. The control handle can then be rotated outward to a position perpendicular to the door. This action withdraws the bayonet latches from the door frame and unlatches the door.

B. Seal.

Sealing is provided around the doors by a bead-type seal that is energized by cabin pressure. This seal fits into the retainer around the door and contacts a shoulder on the door frame when the door is closed. Seal construction is of tear-resistant silicone rubber reinforced with Dacron fabric. It is made as a flat surface with formed seal retaining flanges along each edge. During seal installation, the retaining flanges are brought together and held by the seal retainer to form a "loop" so that cabin pressure can pass into the seal and force the crown of the seal against the door frame. The ends of the seal are vulcanized together to form a continuous seal around the periphery of the door.


B
HINGE IS ADJUSTABLE INBOARD AND OUTBOARD BY REPOSITIONING JAM NUTS
DOOR STRUCTURE
SEAL
SEAL STRIKER
NYLON BUMPER
AFT
DOOR STOP
FUSELAGE STRUCTURE
BREAKAWAY TYPE HINGE
B
DOOR STRUCTURE
FUSELAGE PART OF HINGE
DOOR PART OF HINGE
C
BAYONET LATCH OPERATING LINKAGE
HANDLE LOCK PIN
DOOR CONTROL HANDLE (SHOWN IN UNLATCHED POSITION)
SPRING-LOADED HANDLE LOCK CATCH (SHOWN DEPRESSED)
BAYONET LATCH
DOOR CONTROL HANDLE (SHOWN IN LATCHED OR STOWED POSITION)
LATCHING MECHANISM OPERATION
NOTE:
LEFT-HAND DOOR SHOWN, RIGHT-HAND SIMILAR. DOORS ARE INWARD OPENING PLUG TYPE DOORS.
A
DOOR SEAL
RETAINER
FUSELAGE BAYONET RECEPTACLE
DOOR CONTROL HANDLE
FWD
C
B
BAYONET LATCH
DOOR STOP
30 30 52 013 A

ELECTRICAL COMPARTMENT "TUNNEL" DOORS - REMOVAL/INSTALLATION

1. Removal/Installation Left and Right "Tunnel" Access Doors (see Figure 401)

A. General.

Figure Detail

The Removal/Installation procedures for the left and right doors are identical.

B. Equipment Required - None.

C. Remove Door.

(1) Depress PUSH button latch in center of door control handle and allow handle to swing outward from recess. — A

NOTE: The door control handle is spring-loaded and will swing approximately 15 degrees outward from its recessed position when PUSH button latch is released. The first 15 degrees of handle movement does not move the latching mechanism.

(2) Grasp control handle and rotate outward to a position perpendicular to the surface of the door.

(3) Push inward on top of door.

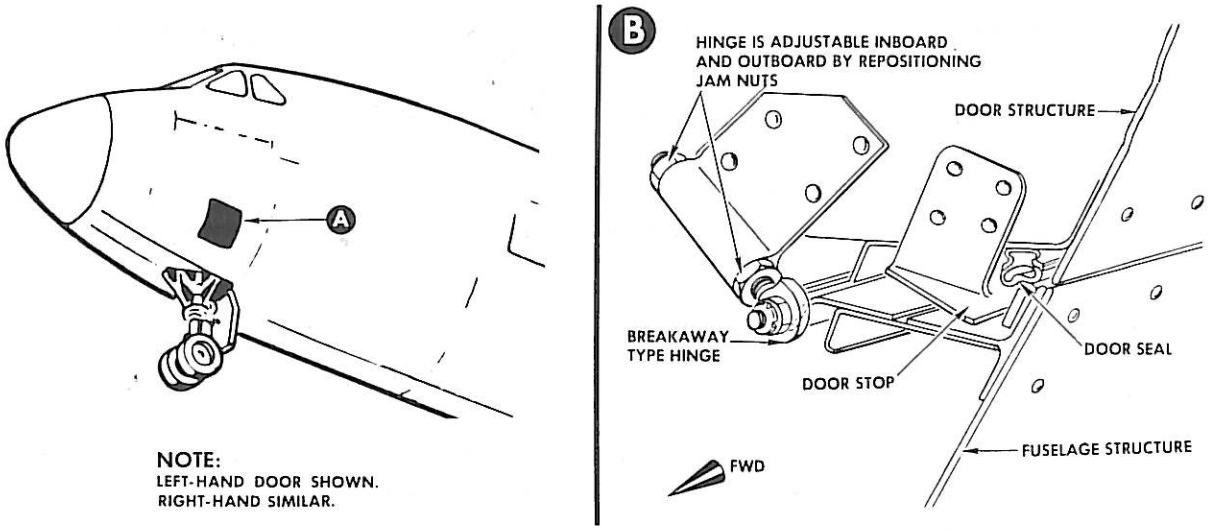
(4) Cock door to one side--disengage the breakaway hinge at bottom of door and remove door through opening. — B

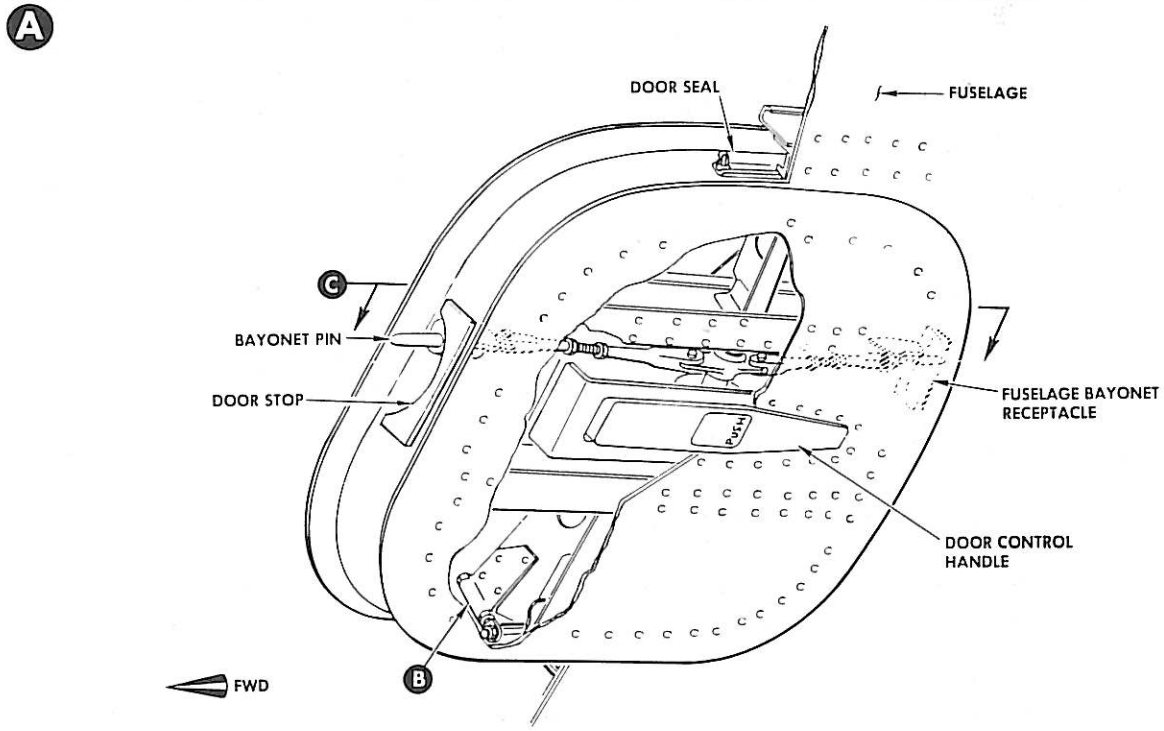
D. Install Door.

(1) Insert door through opening in fuselage.

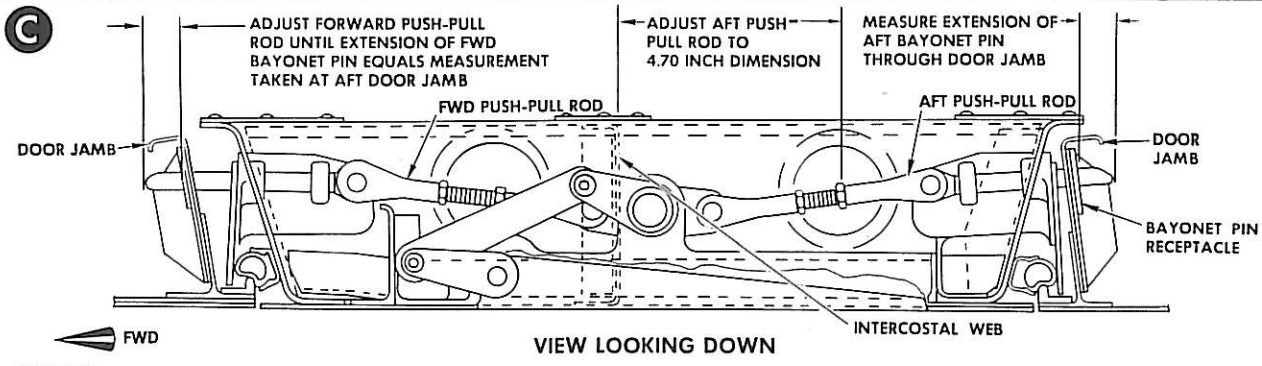
(2) Engage breakaway hinge fitting, on bottom of door, with U-shaped fitting on door frame. — B

(3) Pull door outward against the door frame; then rotate the door control handle to the latched position. — A





ELECTRICAL COMPARTMENT DOOR



VIEW LOOKING DOWN

ELECTRICAL COMPARTMENT "TUNNEL" DOORS - ADJUSTMENT/TEST

1. Adjustment/Test Electrical Compartment Doors (see Figure 401)

Figure Detail

A. Equipment Required - None.

B. Procedure.

(1) Adjust latch mechanism as follows:

(a) With door removed, adjust length of aft push-pull rod to obtain a nominal dimension of 4.70 inches between aft side of door upper intercostal web and centerline of jam nut at aft end of push-pull rod. — B

(b) With door installed, measure extension of aft bayonet pin through door jamb. Adjust length of forward push-pull rod until extension of forward bayonet pin equals measurement taken at aft door jamb. — B

(2) Check door fair-in as follows:

(a) Close door and check engagement of the bayonet pins with their receptacles and door fair-in with fuselage contour. Adjust door hinge fittings and the bayonet pin receptacles as necessary to obtain proper fair-in of door. — A, B&C

NOTE: Hinge adjustments are accomplished by loosening the jam nuts on hinge eyebolts and repositioning shank of eyebolts through hinge arms. The bayonet pin receptacles and supporting structure are slotted to provide adjustment. To adjust bayonet pin receptacles loosen the attaching bolts and reposition the receptacles as necessary.

(3) Check the following clearances:

(a) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch; trim edge of door skin as required.

NOTE: Pressurize fuselage to 8.2 psi as directed in Chapter 21, AIR CONDITIONING.

(b) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

(c) Longitudinal mismatch between door and fuselage structure shall not exceed 0.030 inch.

(d) Door stops along forward and aft edges of door shall contact door frame at least one place along each side. Gaps at top, bottom, forward, and aft door stops may increase away from point of contact 0.001 inch per inch, up to 0.005 inch maximum. Gap at top and bottom of door must not be less than gap at nearest edge of forward and aft door stops; trim door stops as required.

NOTE: Stop contact may be checked by placing masking tape along stop contact surfaces of the door frame, and marking the edge of stops with a grease pencil. When the door is closed, the grease pencil markings will leave an imprint at points of contact.

(e) When door is opened and closed, the bayonet pins shall clear door frame. If bayonet pins do not clear door frame, readjust length of bayonet pin push-pull rods as required.

ELECTRICAL COMPARTMENT "TUNNEL" DOORS - INSPECTION/CHECK

1. Inspection/Check Electrical Compartment "Tunnel" Doors

A. Check the following:

(1) Cracks and corrosion on door internal and external skins.

(2) Cracks and corrosion on door frame and breakaway hinge.

(3) Cracks, corrosion, loose or missing fasteners at door stops.

(4) Cracks, corrosion, excessive abrasion, and loose or missing bolts on door bayonet pin receptacles.

(5) Bayonet pins for excessive wear; ascertain that bayonet pins are not bent.

(6) Cracks, tears, cuts and excessive abrasion of door seal. Check that seal is properly installed in seal retainer and that seal contacts door frame around entire periphery of door.

(7) Opening and closing operation of door to assure that latching mechanism and bayonet pins are not binding.

ELECTRONIC COMPARTMENT DOOR - DESCRIPTION AND OPERATION

1. Description

The electronic compartment door (see Figure 1) is an inward opening plug-type door measuring approximately 20 x 30 inches, and is located on the bottom centerline of the fuselage just aft of the nose wheel well at station 289. The door is hinged at the aft edge, and is secured in the closed position by two bayonet-type latches at the forward edge of door.

The electronic compartment door is of conventional built-up rib and skin construction employing 2024 and 7075 aluminum alloy material. Basic door structure consists of a formed outer frame and a chemically milled outer skin with interconnecting fore-and-aft ribs. Two aluminum alloy stops are fastened on both the right and left-hand side of the door. (A single stop is provided at the forward edge of the door.)

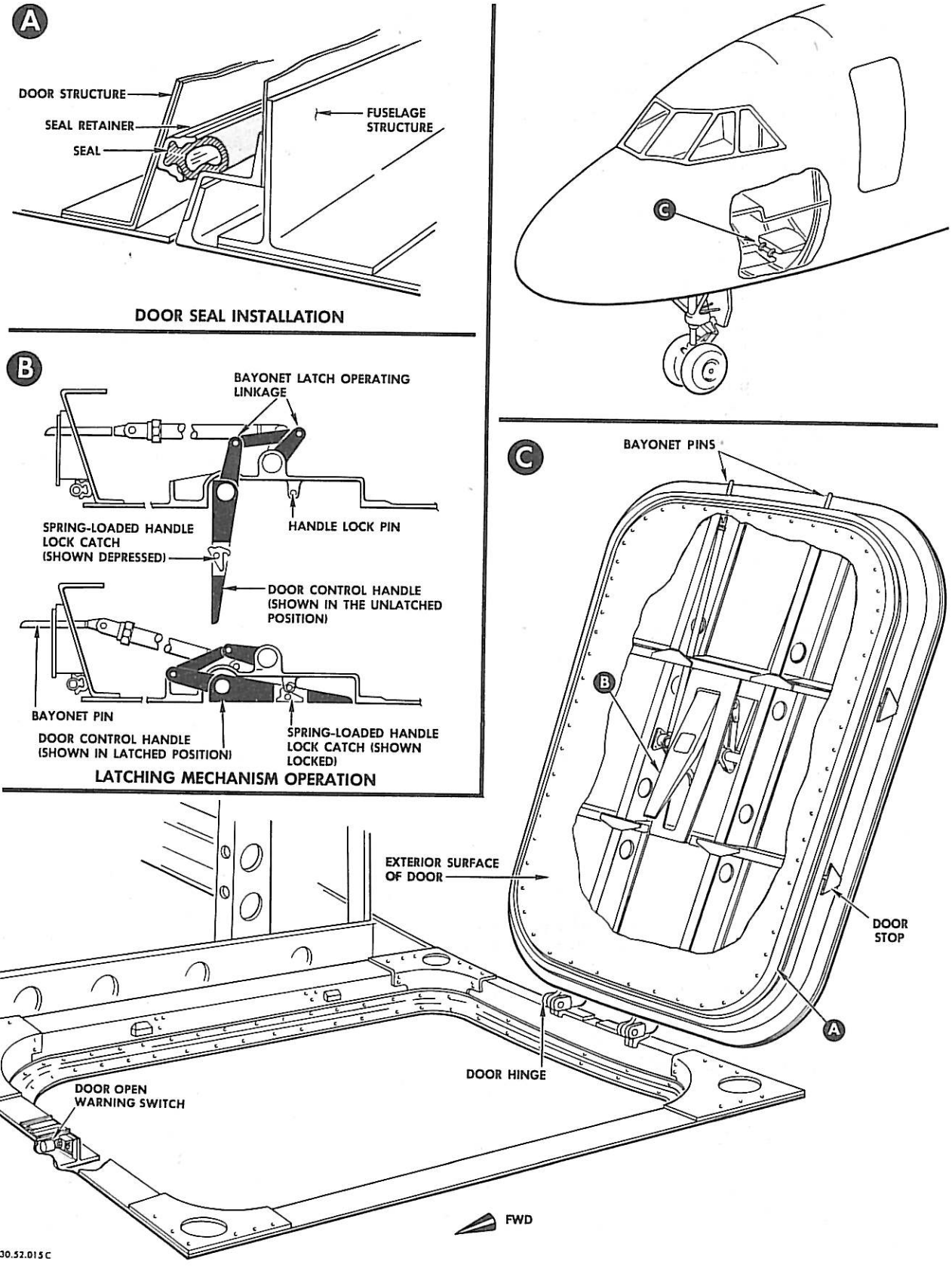
A door-open warning switch is provided in the fuselage frame of the electronic compartment door. The switch is located on the forward side of the door frame and is actuated by one of the door latch bayonet pins. The door-open warning switch also connects into the electronic compartment lighting circuit to control area illumination when the door is open (refer to Chapter 33, LIGHTS).

A. Latching Mechanism.

Two bayonet latches secure the electronic compartment door in the closed position. The door control handle actuates the bayonet latch mechanism through a system of bellcranks and push-pull rods. Depressing a small button in the center of the door handle allows the handle to swing out of its recess approximately 15 degrees. The handle can then be rotated outward to a position perpendicular to the door. This action withdraws the bayonet pins from the forward side of the door frame and unlatches the door.

B. Seal.

Sealing is provided around the electronic compartment door through a bead-type seal that is energized by cabin pressure. This seal fits into an extruded aluminum alloy retainer around the inside periphery of the door and contacts a shoulder on the door frame when the door is closed. The retainer consists of a formed section with two protruding lips along each aide of its inner surface near the base. These lips fit over the molded flanges along each side of the seal to retain the seal in position. Seal construction is of tear-resistant silicone rubber reinforced with Dacron fabric. It is molded as a flat surface with formed seal retaining flanges along each edge. During seal installation, the retaining flanges are brought together and held by the seal retainer to form a "loop" so that cabin pressure can pass into the seal through vent holes and force the crown of the seal against the door frame. The ends of the seal are vulcanized together to form a continuous seal around the periphery of the door.


A
DOOR STRUCTURE
SEAL RETAINER
SEAL
FUSELAGE STRUCTURE
DOOR SEAL INSTALLATION
B
BAYONET LATCH OPERATING LINKAGE
HANDLE LOCK PIN
SPRING-LOADED HANDLE LOCK CATCH (SHOWN DEPRESSED)
DOOR CONTROL HANDLE (SHOWN IN THE UNLATCHED POSITION)
BAYONET PIN
DOOR CONTROL HANDLE (SHOWN IN LATCHED POSITION)
SPRING-LOADED HANDLE LOCK CATCH (SHOWN LOCKED)
LATCHING MECHANISM OPERATION
C
BAYONET PINS
EXTERIOR SURFACE OF DOOR
DOOR STOP
DOOR HINGE
DOOR OPEN WARNING SWITCH
FWD
22.30.52.015C

ELECTRONIC COMPARTMENT DOOR - REMOVAL/INSTALLATION

1. Removal/Installation Electronic Compartment Door (see Figure 401)

A. Equipment Required - None.

Figure Detail

B. Remove Electronic Compartment Door.

(1) Depress PUSH button latch in center of door control handle and allow handle to swing out from its recess.

NOTE: The door control handle is spring-loaded to swing from its recess approximately 15 degrees when released. This initial 15 degree movement does not move the door latching mechanism.

(2) Grasp the door control handle and rotate handle to a position perpendicular to surface of door. — A

(3) Push inward on forward edge of door and rotate door to a position aft of door opening.

(4) Remove cotter pin, bolt, and washers through each hinge fitting and remove door through fuselage opening. — B

C. Install Electronic Compartment Door.

(1) Insert door through opening in fuselage.

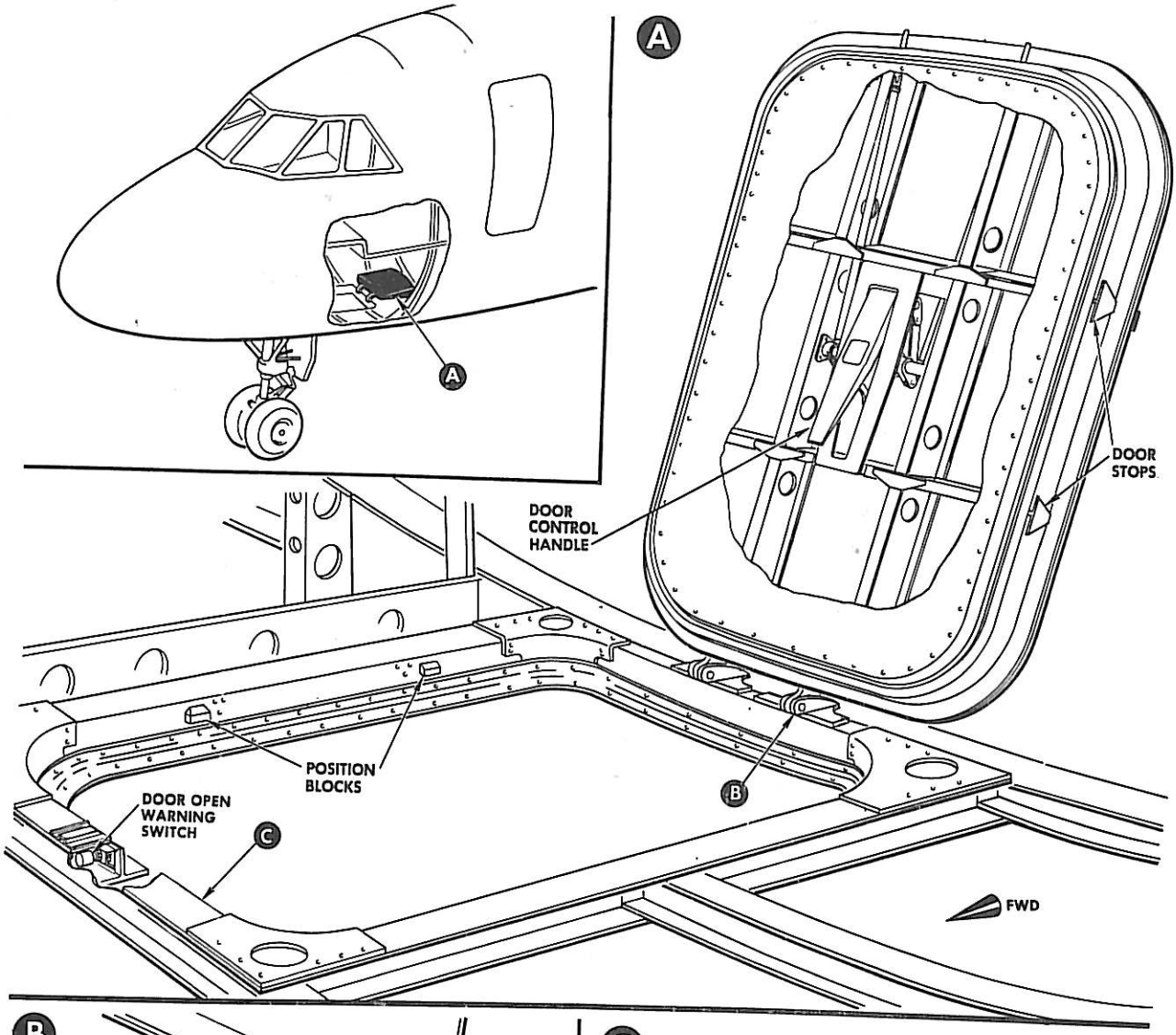
(2) Align hinge fittings and install hinge bolt, washers, nut, and cotter pin in each fitting. — B

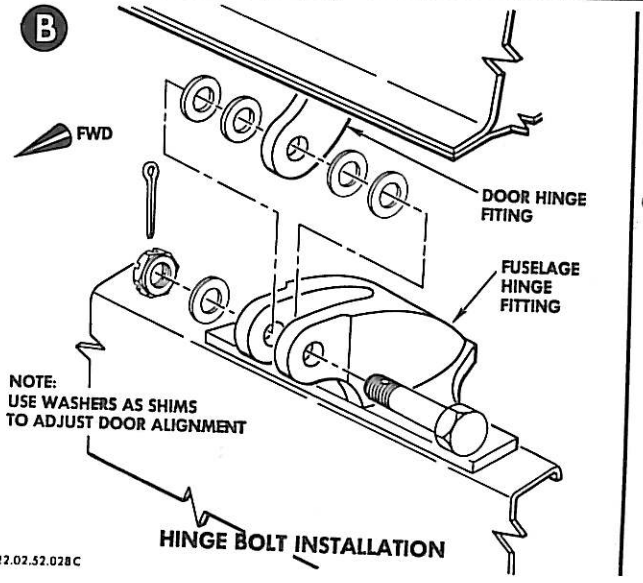
NOTE: Use washers as shims to align door with fuselage opening; tighten nuts finger-tight and install cotter pin.

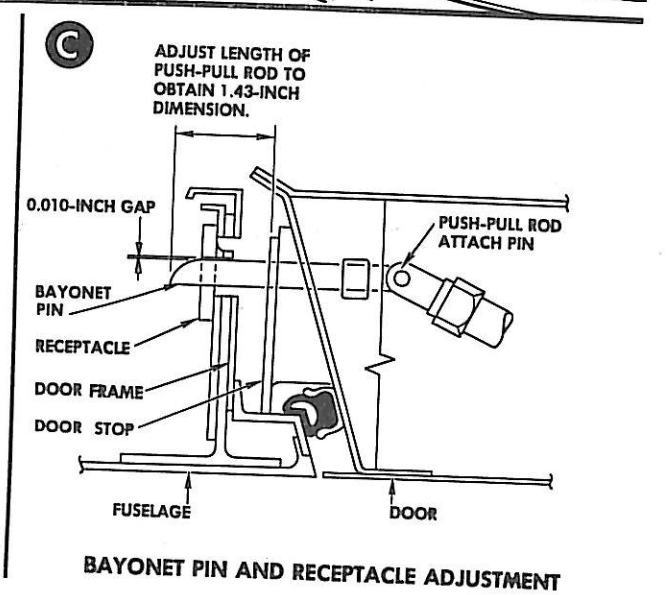
(3) Perform adjustment/test procedure.

2. Removal/Installation Electronic Compartment Door Pressure Seal

For removal/installation electronic compartment door pressure seal, refer to 52-0.







Electronic Compartment Door Installation
Figure 401

ELECTRONIC COMPARTMENT DOOR - ADJUSTMENT/TEST

1. Adjustment/Test Electronic Compartment Door (see Figure 401)

A. Equipment Required - None.

Figure Detail

B. Procedure.

(1) Remove door interior insulation (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

(2) Adjust the two bayonet pin receptacles in door frame so stop on forward edge of door contacts the door frame and there is 0.010-inch gap between top of each bayonet pin and its receptacle. C

NOTE: Slots are provided in the bayonet pin receptacles and supporting structure for receptacle adjustment. To adjust receptacles, loosen attach bolts and reposition fittings as required.

(3) Adjust the bayonet pins as follows:

(a) With the door either removed from the airplane, or held in a slightly open position, move the door handle to the locked position. A nominal dimension of 1.43 inches shall be measured from the door stop plate to the end of the bayonet pin. C

(4) Check for the following clearances:

(a) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch; trim as required.

(b) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

(c) Longitudinal mismatch between door and fuselage skin shall not exceed 0.030 inch.

(d) Stop on forward edge of door shall contact door frame. Gap at door stops may increase away from points of contact 0.001 inch per inch, up to 0.005 inch maximum.

(e) Gap at the forward side stops on each side of the door must be less than gap at each end of stop on forward end of door; trim stops as required.

(5) Replace door interior insulation (refer to Chapter 25, EQUIPMENT/ FURNISHINGS).

(6) Check door open warning switch adjustment. The switch should be positioned so that the door bayonet pin just touches the switch actuator when the switch and actuator are parallel. See 52-6-0, Figure 202.

ELECTRONIC COMPARTMENT DOOR - INSPECTION/CHECK

1. Inspection/Check Electronic Compartment Door

   A. Check the following:

      (1) Cracks and corrosion on door internal and external skins.

      (2) Cracks and corrosion on door frame and hinges.

      (3) Cracks, corrosion, loose or missing fasteners at door stops.

      (4) Cracks, corrosion, excessive abrasion, and loose or missing bolts on door bayonet pin receptacles.

      (5) Bayonet pins for excessive wear; ascertain that bayonet pins are not bent.

      (6) Cracks, tears, cuts, and excessive abrasion of door seal. Check that seal is properly installed in seal retainer and that seal contacts door frame around entire periphery of door.

      (7) Opening and closing operation of door to assure that latching mechanism, bayonet pins, and hinges are not binding.

   B. Check the following clearances:

      (1) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch.

      (2) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

      (3) Longitudinal mismatch between door and fuselage skin shall not exceed 0.030 inch.

HYDRAULIC COMPARTMENT DOOR - DESCRIPTION AND OPERATION

1. Description

The access door to the hydraulic compartment is an inward opening plug-type door measuring approximately 17 x 21 inches and is located on the lower left side of the fuselage, aft of the main wheel well at fuselage station 1011. This door is hinged at the top with a piano-type hinge. The door is secured in the closed position by a bayonet-type latch pin on its forward and aft edges. See Figure 1 for an illustration of the hydraulic compartment door and its location.

The hydraulic compartment door is of conventional built-up rib and skin construction employing 2024 and 7075 aluminum alloy. Basic door structure consists of a built-up outer frame and a chemically milled outer skin with interconnecting fore-and-aft ribs. Heavy aluminum alloy plate stops are screwfastened to the forward and aft edges of the door; a smaller stationary stop is provided at the lower edge of the door.

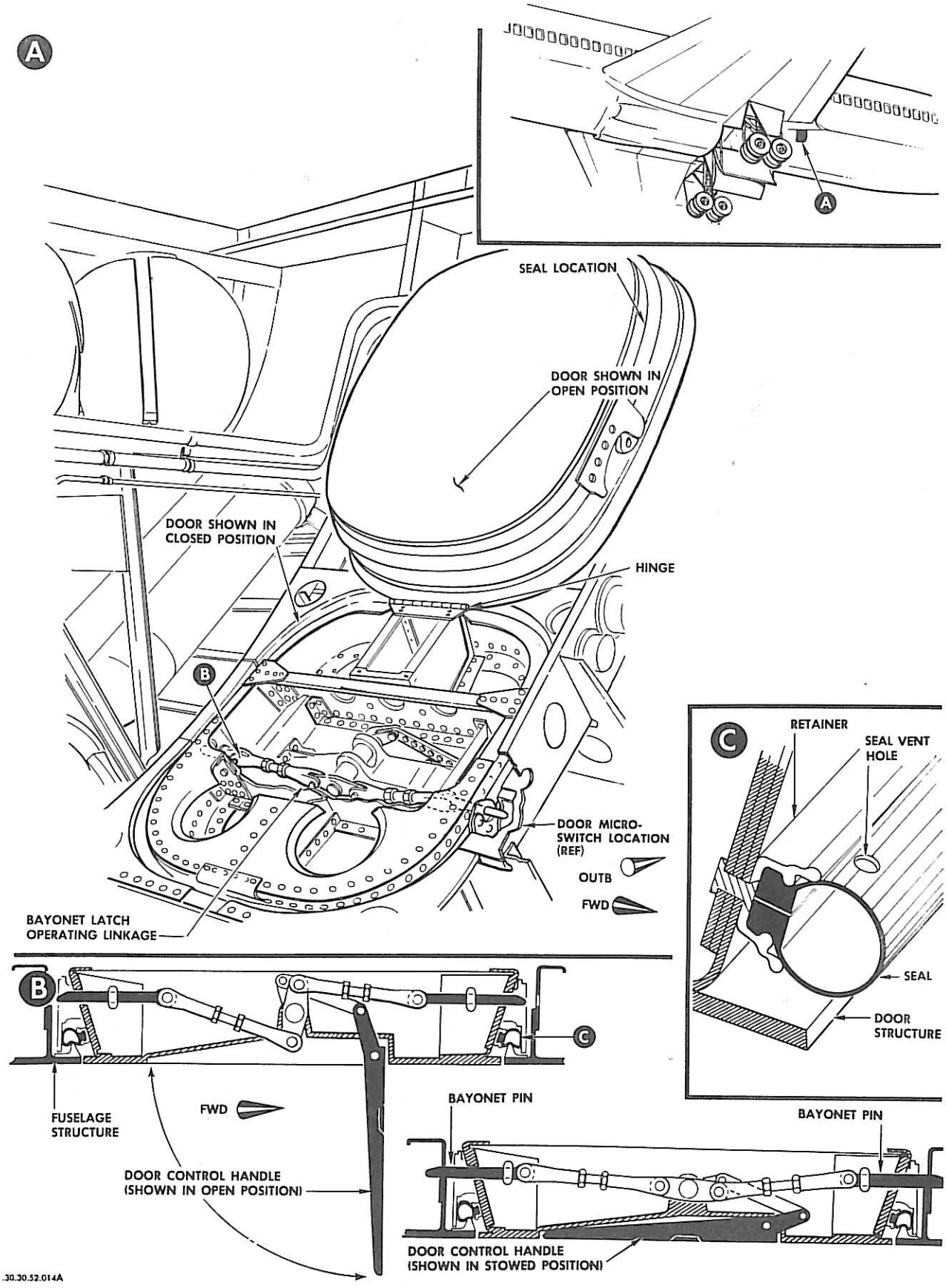
A door microswitch is installed in the door frame (refer to 52-6-0) to control a door-open warning light in the flight compartment. The door microswitch also connects into the hydraulic compartment lighting circuit to control area illumination when the door is open (refer to Chapter 33, LIGHTS).

A. Latching Mechanism.

Two bayonet latches secure the hydraulic compartment door in the closed position. The door control handle actuates the bayonet latch mechanism through a system of bellcranks and push-pull rods. Depressing a small button in the center of the door handle allows the handle to swing out of its recess approximately 15 degrees. The operator can then grasp the door control handle and rotate it outward to a position perpendicular to the door. This action withdraws the bayonet pins from the door frame and unlatches the door. The bayonet pins, bolts, etc. are steel, while other parts such as the control handle, control handle recess, and bellcranks are aluminum forgings.

B. Seal.

Sealing is provided around the hydraulic compartment door through a bead-type seal that is energized by cabin pressure. This seal fits into an extruded aluminum alloy retainer around the inside periphery of door and contacts a shoulder on the door frame when the door is closed. The retainer consists of a formed section with two protruding lips along each side of its inner surface near the base. These lips fit over the molded flanges along each side of the seal to restrain the seal in position. Seal construction is of tear-resistant silicone rubber reinforced with Dacron fabric. It is molded as a flat surface


A
A
SEAL LOCATION
DOOR SHOWN IN OPEN POSITION
DOOR SHOWN IN CLOSED POSITION
HINGE
B
DOOR MICRO-SWITCH LOCATION (REF)
OUTB
FWD
BAYONET LATCH OPERATING LINKAGE
C
RETAINER
SEAL VENT HOLE
SEAL
DOOR STRUCTURE
B
C
FUSELAGE STRUCTURE
FWD
DOOR CONTROL HANDLE (SHOWN IN OPEN POSITION)
BAYONET PIN
BAYONET PIN
DOOR CONTROL HANDLE (SHOWN IN STOWED POSITION)
30.30.52.014A

with formed seal retaining flanges along each edge. During seal installation, the retaining flanges are brough together and held by the seal retainer to form a "loop" so that cabin pressure can pass into the seal through vent holes and force the crown of the seal against the door frame. The ends of the seal are vulcanized together to form a continuous seal around the periphery of the door.

HYDRAULIC COMPARTMENT DOOR - REMOVAL/INSTALLATION

1. Removal/Installation Hydraulic Compartment Door (see Figure 401)

   A. Equipment Required - None.

   B. Remove Hydraulic Compartment Door.

      (1) Depress PUSH button latch in center of door control handle and allow handle to swing out from its recess.

      NOTE: The door control handle is spring-loaded to swing from its recess approximately 15 degrees when released. This initial 15 degree movement does not move the door latching mechanism.

      (2) Grasp the door control handle and rotate handle to a position perpendicular to surface of door.

      (3) Push inward and up on bottom edge of door until door reaches an overcenter position

      CAUTION: DO NOT LET DOOR FALL FREE FROM OVERCENTER POSITION. SKIN DAMAGE WILL RESULT.

      (4) Slowly open door outward to fully open position.

      (5) Remove door hinge pin and remove door through opening in fuselage.

   C. Install Hydraulic Compartment Door.

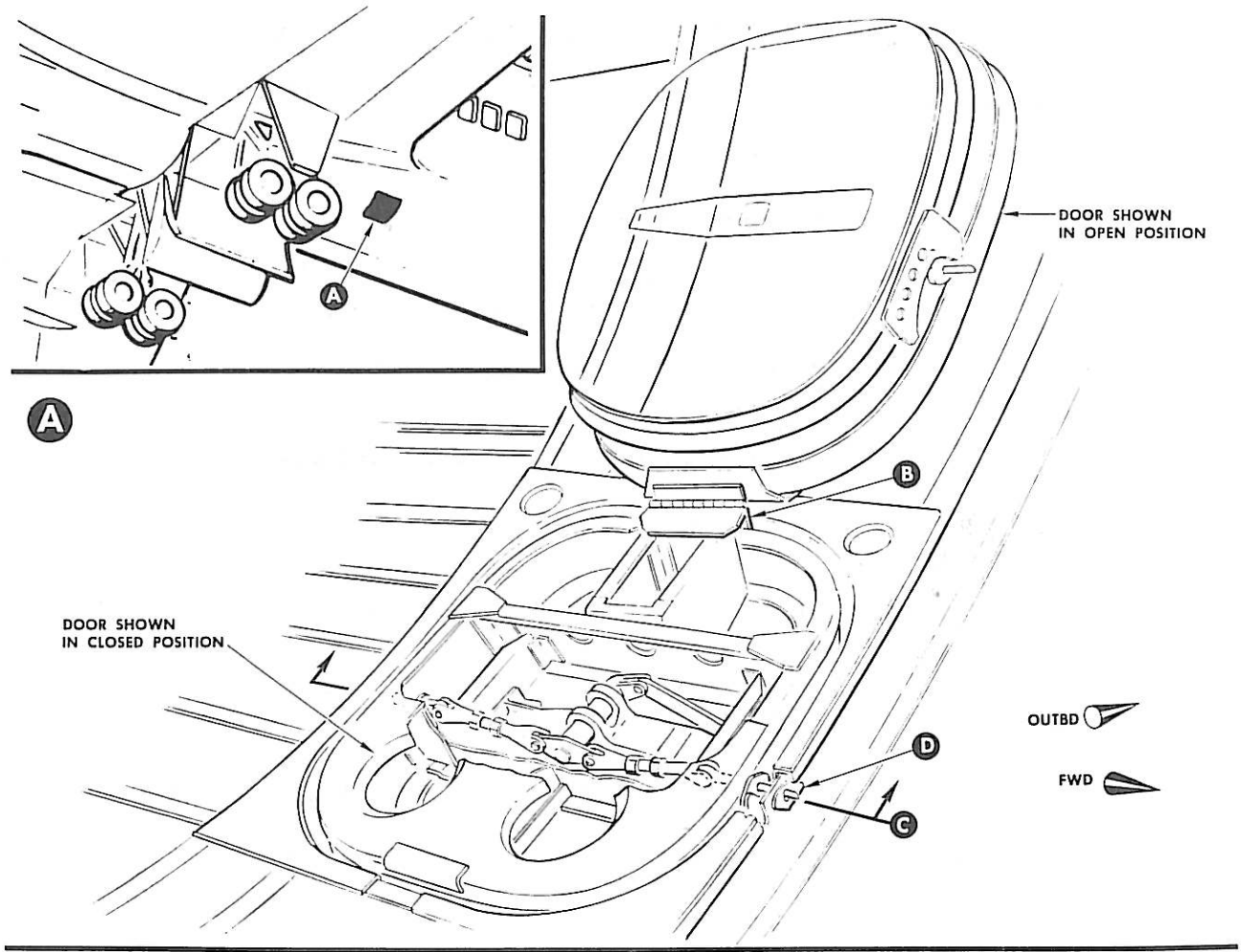
      (1) Insert door through opening in fuselage and align hinge halves. Install door hinge pin, and peen hinge node.

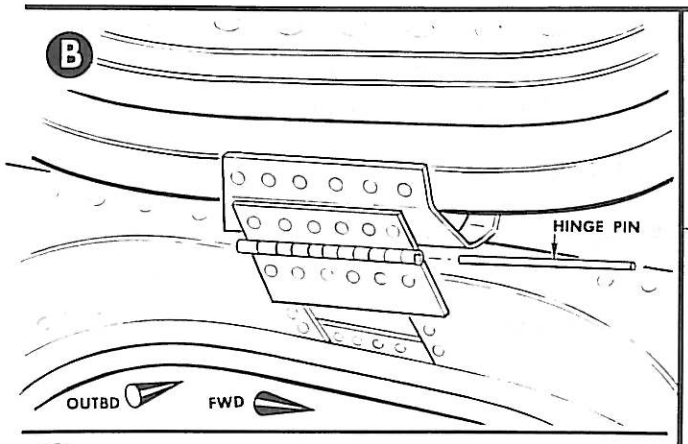
      (2) Perform adjustment/test procedure.

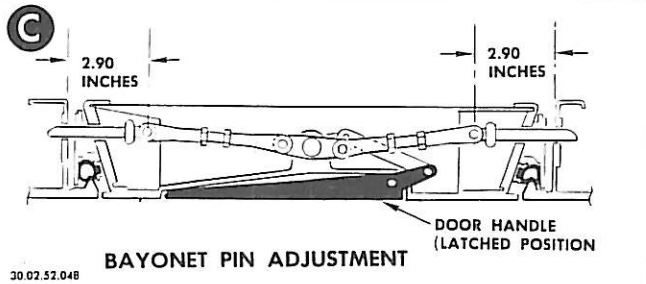
Figure Detail
A

2. Removal/Installation Hydraulic Compartment Door Pressure Seal (see Figure 402)

   For removal/installation of the hydraulic door pressure seal, refer to 52-0.







BAYONET PIN ADJUSTMENT

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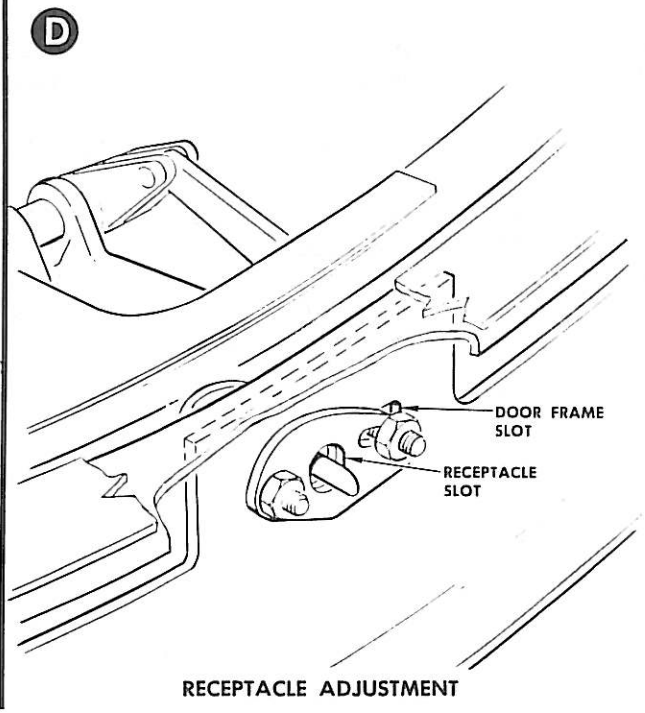


RECEPTACLE ADJUSTMENT

HYDRAULIC COMPARTMENT DOOR - ADJUSTMENT/TEST

1. Adjustment/Test Hydraulic Compartment Door (see Figure 401)

A. Equipment Required - None.

Figure Detail

B. Procedure.

(1) Close door and check engagement of the bayonet pins with their receptacles and door fair-in with fuselage contour. Adjust door bayonet pin receptacles as necessary to obtain proper fair-in of door.

NOTE: The bayonet pin receptacles and supporting structure are slotted to provide adjustment. To adjust bayonet pin receptacles loosen attach bolts and reposition the receptacles as necessary.

(2) With the door closed and latched, check the following:

(a) The bayonet pin on forward and aft edges of door shall engage its receptacle.

(b) A nominal dimension of 2.90 inches shall be measured from edge of door frame to center of attach pin connecting each push-pull rod to its bayonet pin. Adjust length of push-pull rod at each bayonet pin as required.

(3) Check for the following clearances:

(a) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch; trim door as required.

(b) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

(c) Longitudinal mismatch between door and fuselage structure shall not exceed 0.030 inch.

(d) Door stops along forward and aft edges of door shall contact door frame at least one place along each side. Gap may increase away from points of contact 0.001 inch per inch, up to 0.005 inch maximum. Gap at the bottom door stop must not be less than gap at the lower ends of the fore and aft door stops; trim as required.

Figure
Detail

NOTE: Stop contact may be checked by placing masking tape along stop contact surfaces of door frame and the hinge arms, and marking the edge of stops with a grease pencil. When the door is closed, the grease pencil markings will leave an imprint at points of contact.

(e) When door is opened and closed, the bayonet pins shall clear door frame. If bayonet pins do not clear door frame, readjust length of bayonet pin push-pull rods as required.

(4) Adjust door microswitch (refer to 52-6-0).

HYDRAULIC COMPARTMENT DOOR - INSPECTION/CHECK

1. Inspection/Check Hydraulic Compartment Door

   A. Check the following:

      (1) Cracks and corrosion on door internal and external skins.

      (2) Cracks and corrosion on door frame and hinge.

      (3) Cracks, corrosion, loose or missing fasteners at door stops.

      (4) Cracks, corrosion, excessive abrasion, and loose or missing bolts on door bayonet pin receptacles.

      (5) Bayonet pins for excessive wear; ascertain that bayonet pins are not bent.

      (6) Cracks, tears, cuts, and excessive abrasion of door seal. Check that seal is properly installed in seal retainer and that seal contacts door frame around entire periphery of door.

      (7) Opening and closing operation of door to assure that latching mechanism, bayonet pins, and hinge are not binding.

   B. Check the following clearances:

      (1) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch.

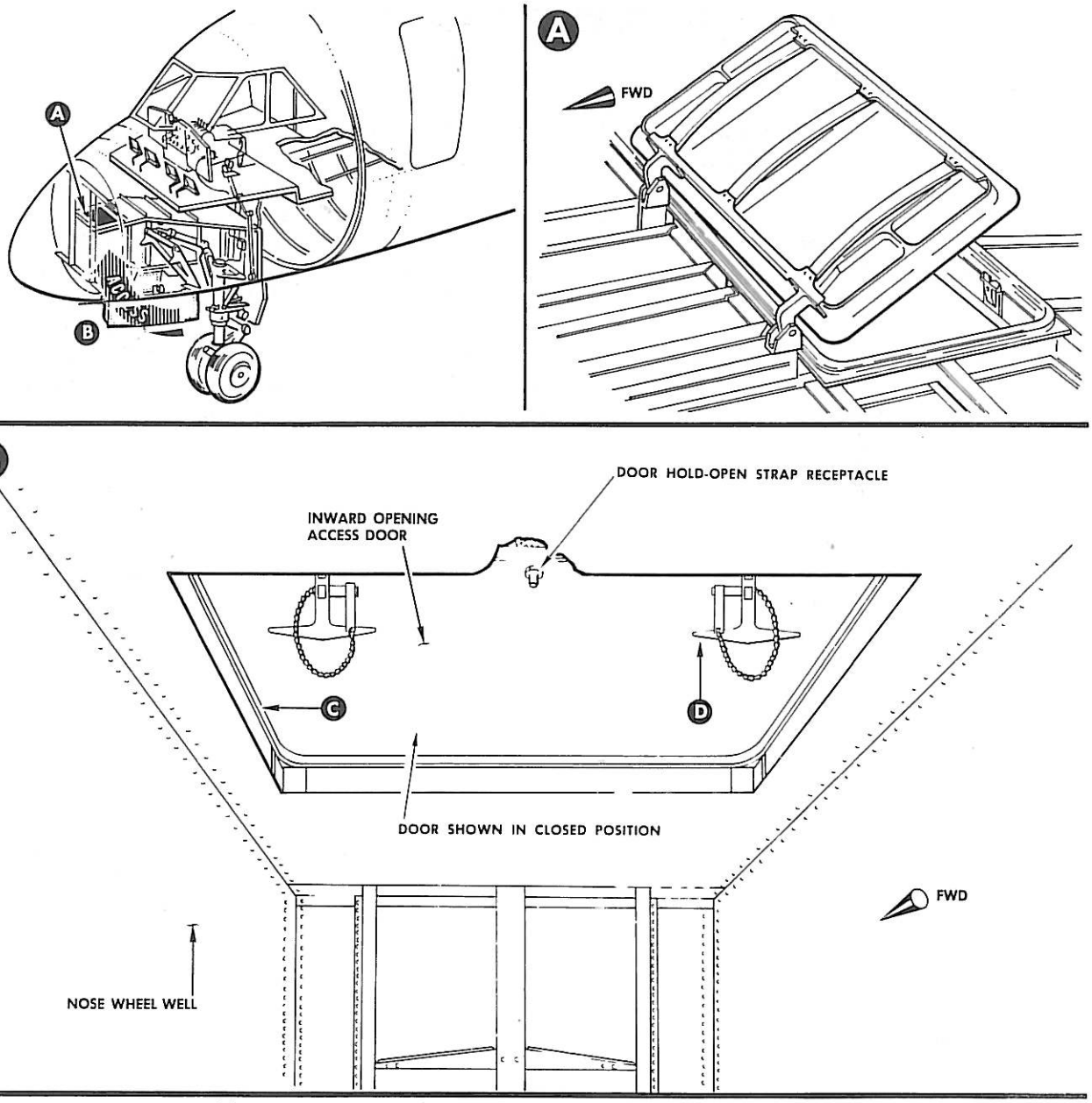
      (2) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

      (3) Longitudinal mismatch between door and fuselage skin shall not exceed 0.030 inch.

NOSE WHEEL WELL DOOR - DESCRIPTION AND OPERATION

1. Description

An access door (see Figure 1) is located in the top of the nose landing gear wheel well at fuselage station 165 for access to the area under the flight compartment floor and to the area behind the instrument panel. The door is hinged on its forward edge and opens inward and forward. Basic door structure consists of a chemically milled plate with built-up fore-and-aft stiffeners on the top surface. A snap fastener receptacle, on the aft edge of the door, provides for the attachment of a door hold open strap (mounted on the adjacent airframe structure), two spring-loaded latches secure the door in the closed position. The handle on each latch is locked in the door-closed position by a ball-lock pin. The door measures approximately 18 x 24 inches and employs a self-energizing, bead-type seal.


A
B
A
FWD
B
DOOR HOLD-OPEN STRAP RECEPTACLE
INWARD OPENING
ACCESS DOOR
G
D
DOOR SHOWN IN CLOSED POSITION
FWD
NOSE WHEEL WELL
C
DOOR
STRUCTURE
SEAL
RETAINER
SEAL
SEAL
STRIKER
NOSE WHEEL WELL
STRUCTURE
22 30 52 017A
SEAL INSTALLATION
D
FWD
SPRING LOADED
LATCH
QUICK RELEASE
LOCKING PIN
LATCH OPERATING
HANDLE
LATCHING MECHANISM

NOSE WHEEL WELL DOOR - REMOVAL/INSTALLATION

1. Removal/Installation Nose Wheel Well Door (see Figure 401)

	Figure Detail
A. Equipment Required - None.	
B. Remove Nose Wheel Well Door.	
(1) Remove ball-lock pin securing each latch handle at aft end of door.	A
(2) Actuate handles in a forward direction to unlatch the spring-loaded latches and push upward on door.	
(3) Rotate door to the full open position.	
(4) Remove ball-lock pin through each hinge pivot and remove door through opening.	B
C. Install Nose Wheel Well Door.	
(1) Insert door through door opening in wheel well and align hinge fittings on door with fittings forward of door opening.	
(2) Install ball-lock pin through each hinge pivot.	B
(3) Rotate door to closed position and latch.	
(4) Insert ball-lock pin through each latch handle and latch housing to secure latches.	A

2. Removal/Installation Nose Wheel Well Door Pressure Seal (see Figure 402)

A. Equipment Required.

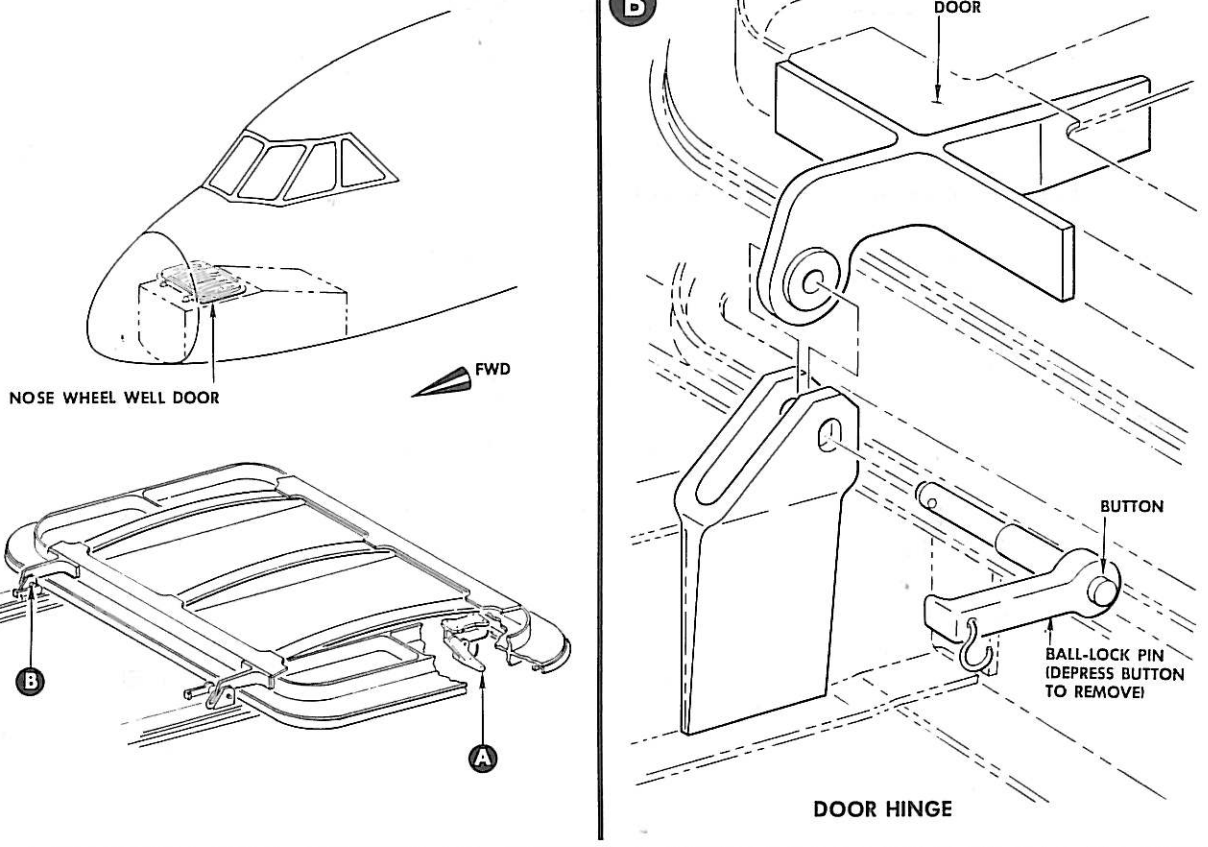
(1) Locally manufactured insertion tool as shown in Section 52-0, or equivalent.

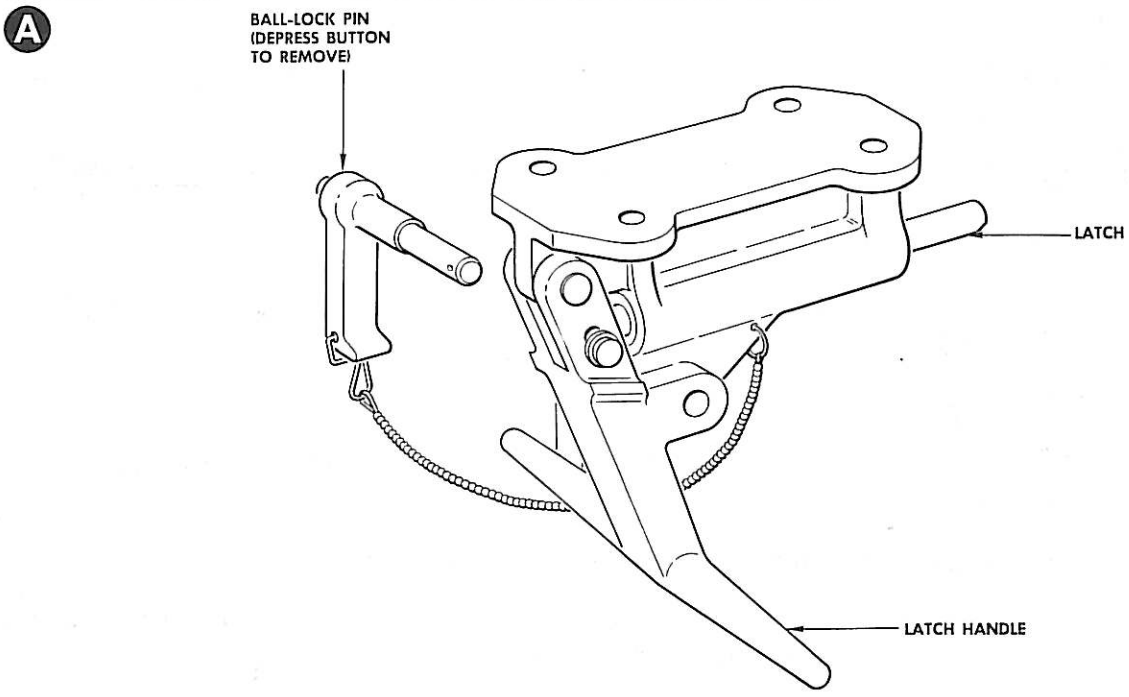
B. Remove Seal.

(1) Insert tapered end of the insertion tool between side of seal and retainer.

(2) Pry retaining flange of seal out of retainer.

CAUTION: DO NOT USE SCREWDRIVER OR SIMILAR SHARP POINTED INSTRUMENT TO REMOVE SEAL FROM RETAINER.





LATCHING MECHANISM

22.02.52.062

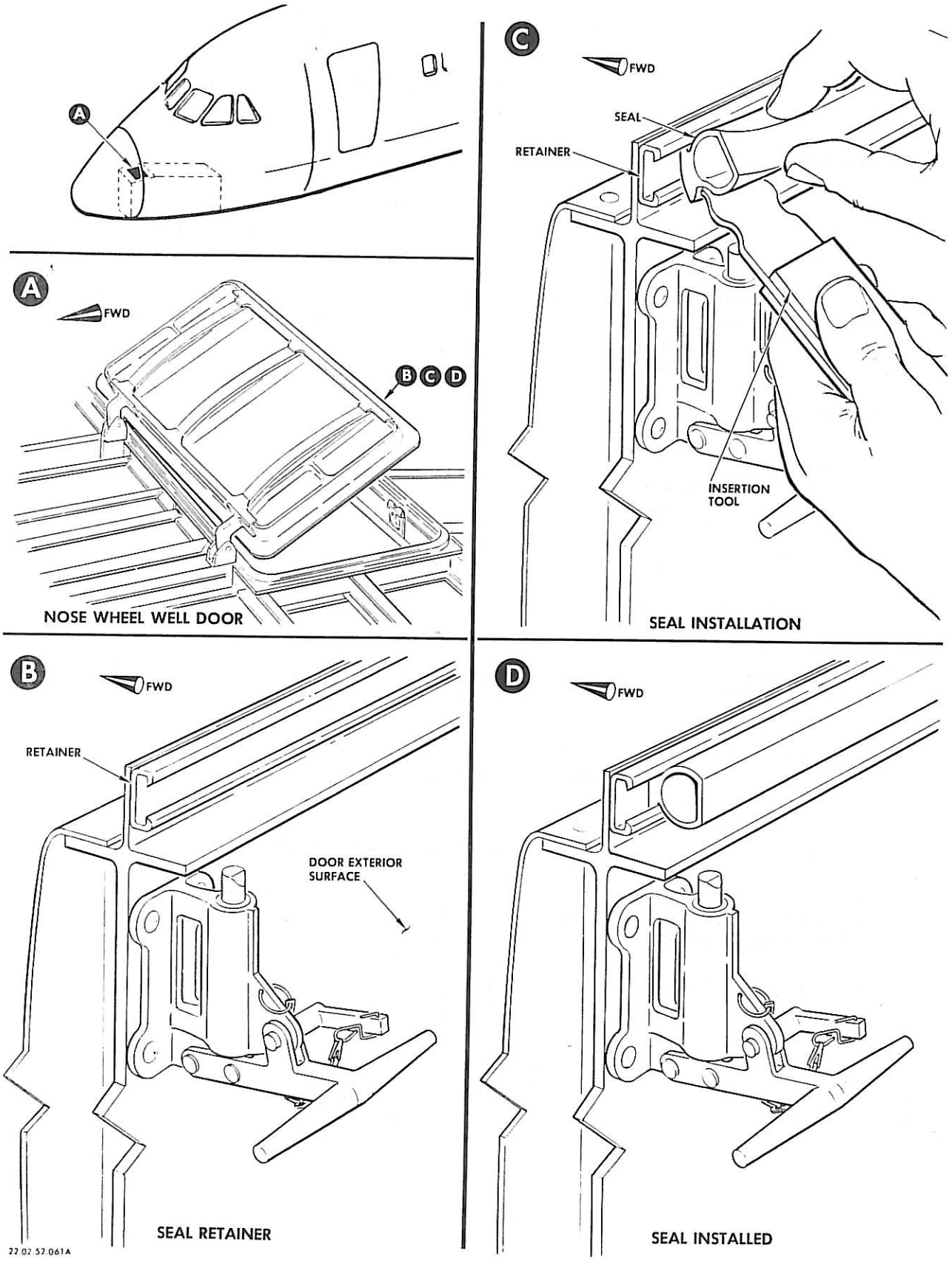

A
FWD
B C D
NOSE WHEEL WELL DOOR
C
FWD
SEAL
RETAINER
INSERTION TOOL
SEAL INSTALLATION
B
FWD
RETAINER
DOOR EXTERIOR SURFACE
SEAL RETAINER
D
FWD
SEAL INSTALLED
22.02.52.061A

Figure
Detail

(3) Repeat steps (1) and (2) around periphery of door and remove seal.

C. Install Seal.

(1) Check that sides of seal retainer around entire periphery of the door are symmetrical so that seal will seat properly when installed.

NOTE: The seal circumference prior to seal installation is smaller than that of the seal retainer; however, as the seal is installed it will stretch to fit the retainer.

(2) Starting on the left-hand side between the corners of the door install seal as follows:

(a) Insert inner molded retaining flange of seal under corresponding lip in the seal retainer.

(b) Using tapered end of the insertion tool apply an inward pressure against the exposed flange of the seal and force the exposed flange under the lip of the seal retainer.

CAUTION: DO NOT USE SCREWDRIVER OR SIMILAR SHARP POINTED INSTRUMENT TO INSTALL SEAL.

(3) Repeat steps (2)(a) and (2)(b), working in both directions until seal is installed around the corners on the left-hand side of the door.

NOTE: Install seal around corners so that crown of seal is not drawn in or crimped.

(4) Install seal on right-hand side of door in same manner as the left-hand side.

(5) Insert seal along forward and aft sides of door in same manner as the left and right-hand sides.

NOTE: When seal installation is complete, the seal crown should be smooth around entire periphery of the door.

NOSE WHEEL WELL DOOR - INSPECTION/CHECK

1. Inspection/Check Nose Wheel Well Door

   A. Check the following:

      (1) Cracks and corrosion on door skins.

      (2) Cracks and corrosion on door frame and hinges.

      (3) Cracks, corrosion, excessive wear, and loose or missing fasteners on door latch pin receptacles.

      (4) Door latches for excessive wear; ascertain that latch pins are not bent.

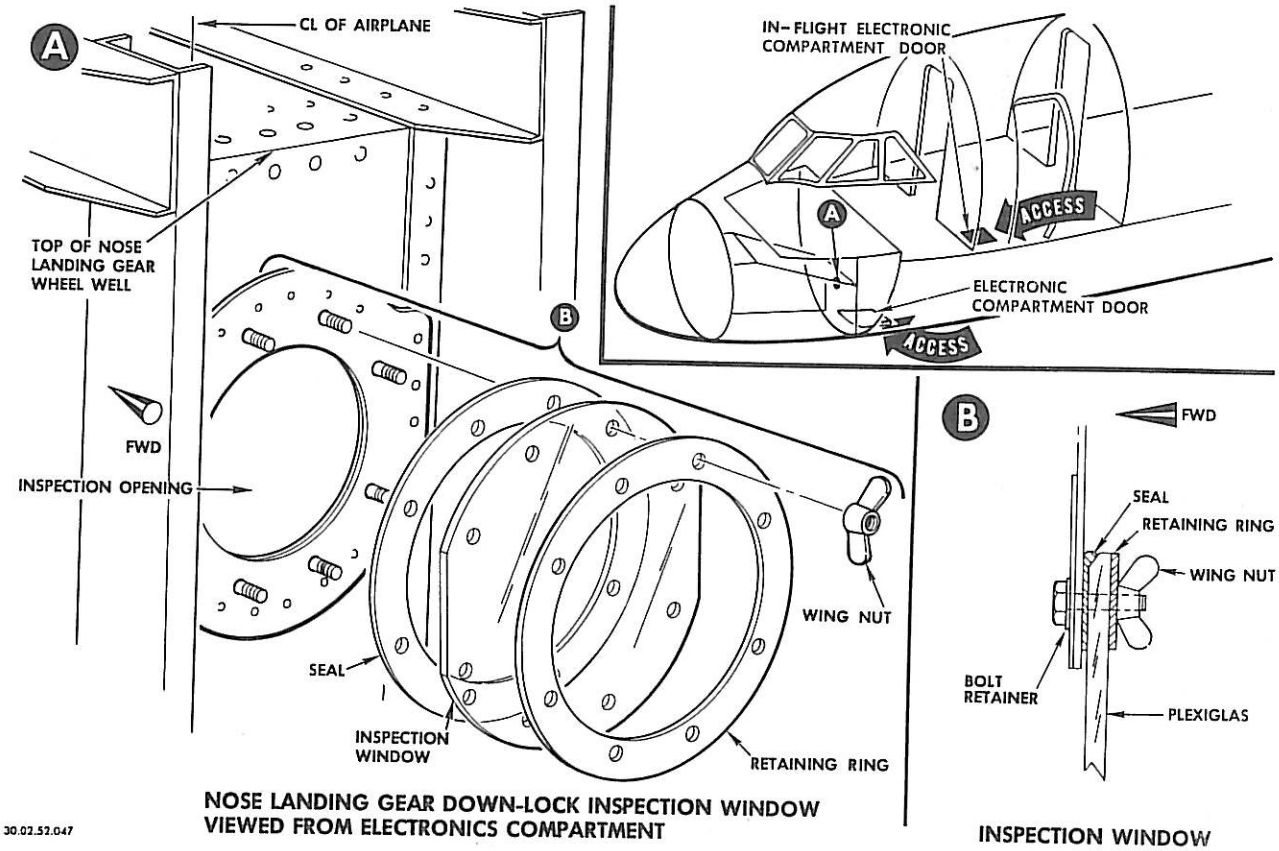
      (5) Cracks, tears, cuts, and excessive abrasion of door seal. Check that seal is properly installed in seal retainer and that seal contacts door frame around entire periphery of door.

      (6) Opening and closing operation of door to assure that door latches and hinges are not binding.

NOSE LANDING GEAR DOWN-LOCK INSPECTION DOOR - DESCRIPTION AND OPERATION

1. Description

A removable, circular plexiglass window approximately five inches in diameter is provided at the forward end of the electronic equipment compartment (fuselage station 250, water line 36) to visually check that the nose landing gear is down and locked, This inspection door also includes a seal to prevent cabin air-pressure leakage. Access to the inspection door in flight is through a door in the cabin floor directly above the electronic equipment compartment. Eight bolts and nuts (wing) secure the inspection door in place. See Figure 1 for an illustration of the door and its location.



30.02.52.047

NOSE LANDING GEAR DOWN-LOCK INSPECTION WINDOW VIEWED FROM ELECTRONICS COMPARTMENT

INSPECTION WINDOW

AIR CONDITIONING AND PRESSURIZATION COMPARTMENT DOORS - DESCRIPTION AND OPERATION

1. General

Three pairs of outward opening doors (see Figure 1) are located in the lower surface of the fuselage aft of the wing leading edge and forward of the main gear wheel wells. The forward pair of doors provide access to the cabin turbocompressor; the middle pair of doors provide access to the air conditioning heat exchanger. The aft pair of doors provide access to the refrigeration package.

2. Cabin Turbocompressor Access Doors

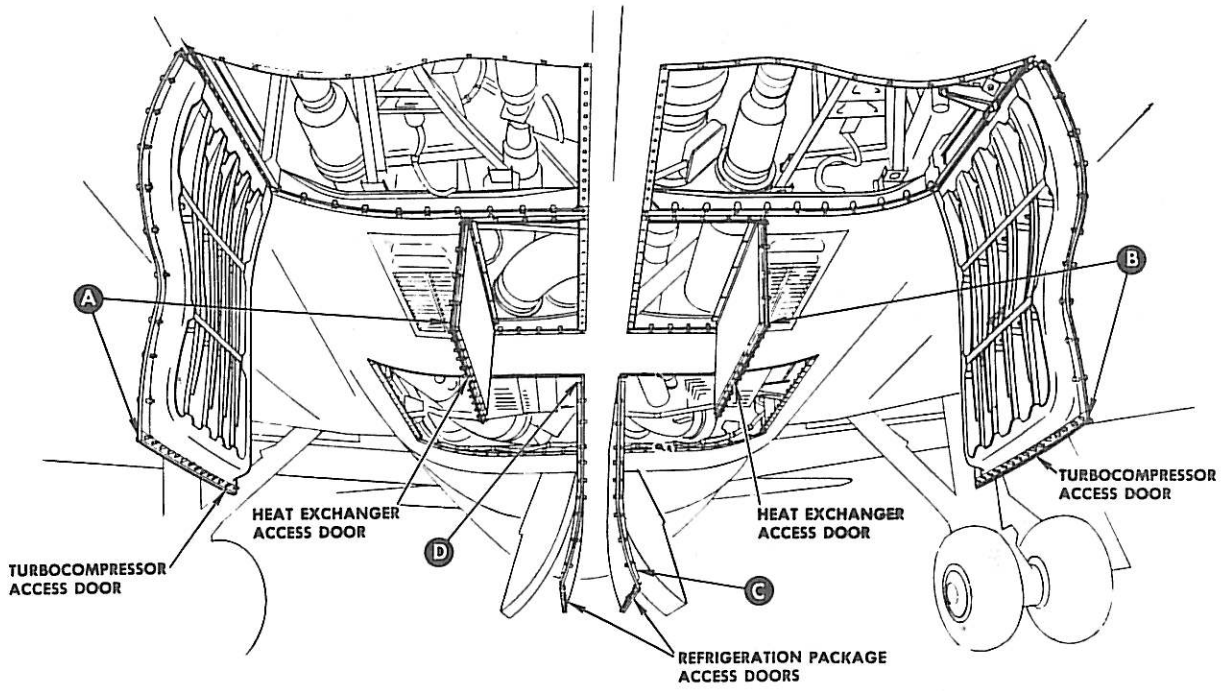
The cabin turbocompressor access doors (forward pair of doors) are of built-up rib and skin construction conforming to the contour of the fuselage. These doors measure approximately 29 x 36 inches each. They are hinged to the fuselage by means of a piano hinge at their outboard edges and are secured in place by 35 Camloc fasteners on each door. A beaded silicone rubber seal, reinforced with an aluminum alloy angle and covered with Dacron cloth, attaches to the fuselage and seals the hinge area of the door. Aluminum alloy strips, with bonded silicone rubber beads along each side, seal the remainder of the door periphery. These beaded aluminum strips are retained by the Camloc fastener studs in the door.

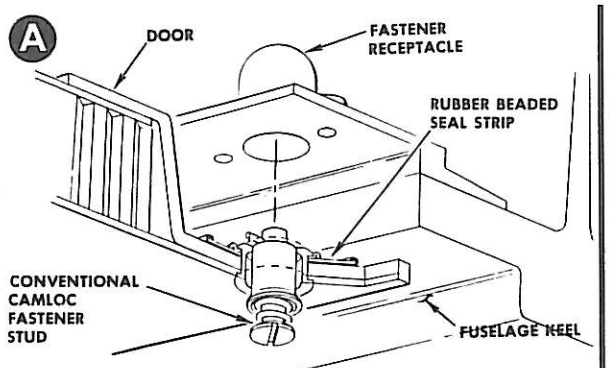
3. Heat Exchanger Access Door

The heat exchanger access doors (center pair of doors) are of honeycomb panel construction measuring approximately 43 x 14 inches. A piano hinge along the outboard edge and 21 Camloc fasteners attach each door to the fuselage structure. Sealing is provided in the same manner as the cabin turbocompressor access doors.

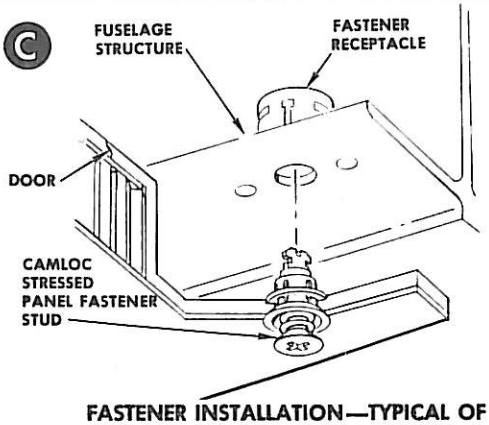
4. Refrigeration Package Access Doors

The refrigeration package access doors (rear pair of doors) are also of honeycomb panel construction and measure approximately 36 x 63 inches each. These doors are hinged at the inboard edge and are secured by 34 Camloc stressed panel fasteners. A 3/8-inch diameter sponge rubber seal, held by an aluminum alloy retainer which is attached to the fuselage structure, seals the hinge area of each door. No seals are provided around the remaining periphery of each door.

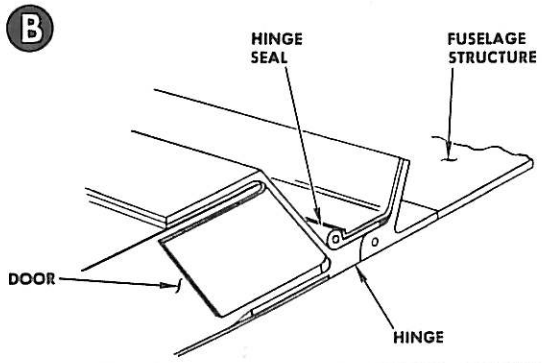




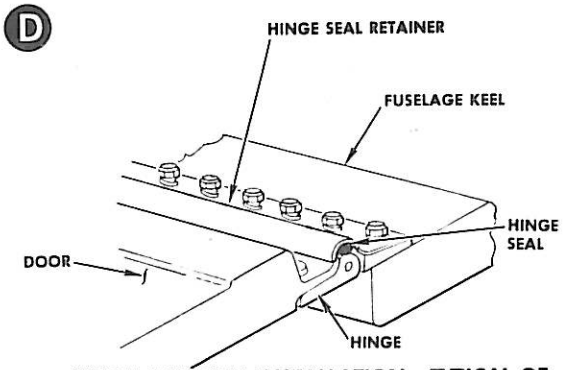
FASTENER AND SEAL INSTALLATION—TYPICAL OF TURBOCOMPRESSOR AND HEAT EXCHANGER ACCESS DOORS



FASTENER INSTALLATION—TYPICAL OF REFRIGERATION PACKAGE ACCESS DOORS



HINGE AND SEAL INSTALLATION—TYPICAL OF TURBO-COMPRESSOR AND HEAT EXCHANGER ACCESS DOORS



HINGE AND SEAL INSTALLATION—TYPICAL OF REFRIGERATION PACKAGE ACCESS DOORS

22.02.52.026 A

AIR CONDITIONING AND PRESSURIZATION COMPARTMENT ACCESS DOORS - MAINTENANCE PRACTICES

1. Removal/Installation - Cabin Turbocompressor Access Doors (see Figure 201)

A. General.

Figure Detail

Removal and installation procedures for the left and right turbocompressor access doors are identical.

B. Equipment Required - None.

C. Remove Cabin Turbocompressor Access Door.

(1) Release Camloc fasteners along three sides of door and open door. — A & B

(2) Pull AIR COND & HYD COMPT LTS circuit breaker on the main circuit breaker panel in the flight compartment. Hang warning sign on circuit breaker.

(3) Remove screws from clamps attaching light electrical harness to door. (Bag and tag clamps and screws for installation.)

(4) Remove screws attaching light assembly to door; remove light assembly. (Bag and tag screws for installation.)

(5) Remove bolts securing the interior vertical leg of hinge and the door hinge seal to the fuselage interior structure; remove seal. (Bag and tag bolts and hinge seal for installation. — B & C

(6) Support door and remove screws securing the exterior attaching leg of hinge to the fuselage structure; remove door. (Bag and tag screws for installation.)

D. Install Cabin Turbocompressor Access Door.

(1) Support door so that screw holes in the exterior attaching leg of hinge align with nutplates in fuselage structure; install screws. — C

(2) Position door hinge seal so that beaded edge of seal will rest against door when door is closed. — B & C

(3) Align bolt holes through hinge seal and the vertical leg of the door hinge with nutplates in the fuselage structure; install bolts.

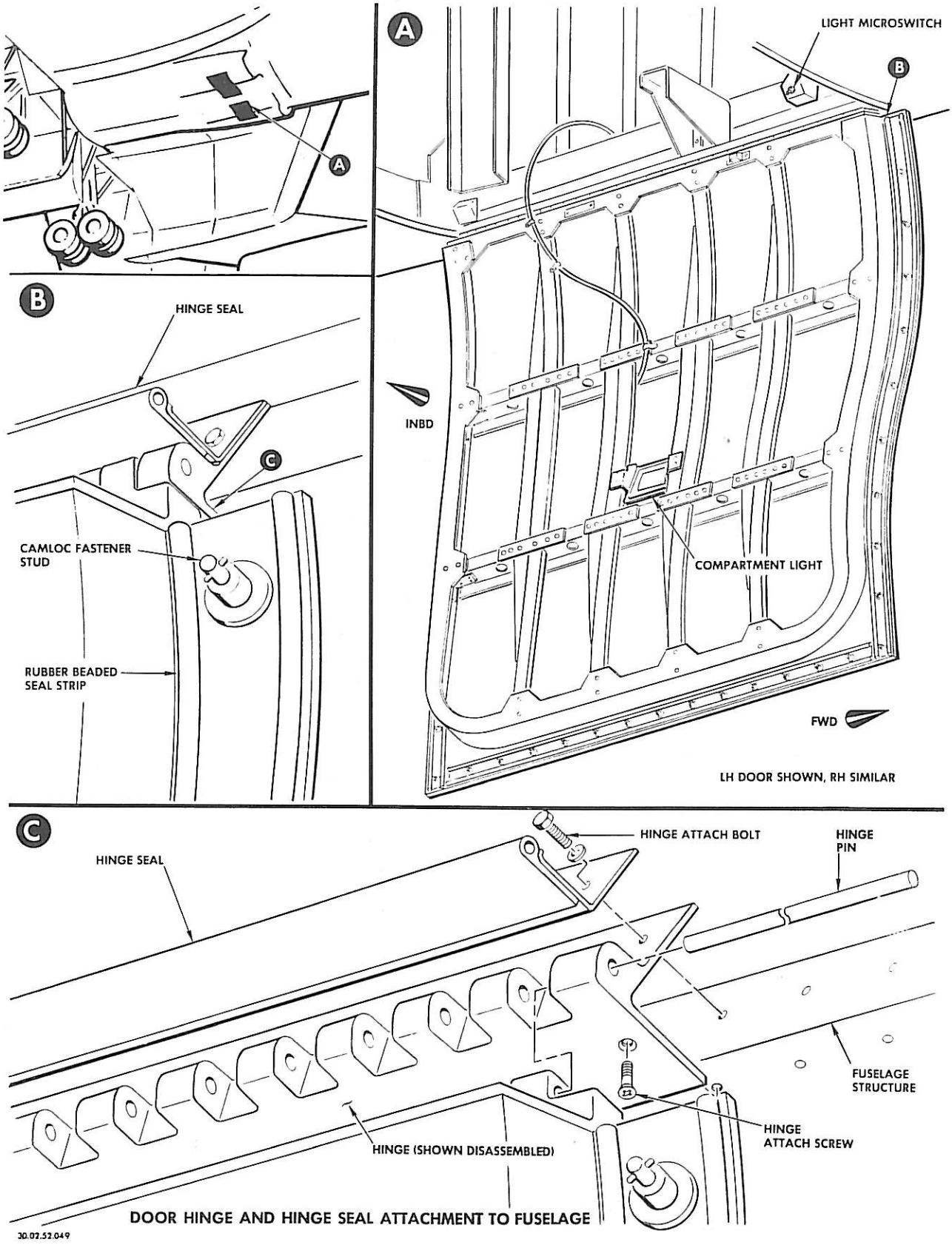

A
LIGHT MICROSWITCH
B
A
B
HINGE SEAL
C
INBD
CAMLOC FASTENER STUD
RUBBER BEADED SEAL STRIP
COMPARTMENT LIGHT
FWD
LH DOOR SHOWN, RH SIMILAR
C
HINGE ATTACH BOLT
HINGE PIN
HINGE SEAL
FUSELAGE STRUCTURE
HINGE ATTACH SCREW
HINGE (SHOWN DISASSEMBLED)
DOOR HINGE AND HINGE SEAL ATTACHMENT TO FUSELAGE
30.02.52.049

Figure Detail

(4) Position light assembly so that mounting holes align with holes in support bracket; install screws. — A

(5) Install screws in clamps attaching light harness to door.

(6) Close AIR COND & HYD COMPT LTS circuit breaker on the main circuit breaker panel.

(7) Accomplish compartment light adjustment/test procedure. (Refer to Chapter 33, LIGHTS.)

(8) Close door and secure Camloc fasteners. — A & B

(9) Check that the following conditions exist:

(a) Gap between door and fuselage skin shall be 0.060 (+0.000, -0.030) inch; trim door as required.

(b) Transverse mismatch shall not exceed 0.020 inch.

(c) Longitudinal mismatch shall not exceed 0.030 inch.

2. Removal/Installation Heat Exchanger Access Doors (see Figure 202)

A. General.

Removal and installation procedures for the left and right heat exchanger access doors are identical.

B. Equipment Required - None.

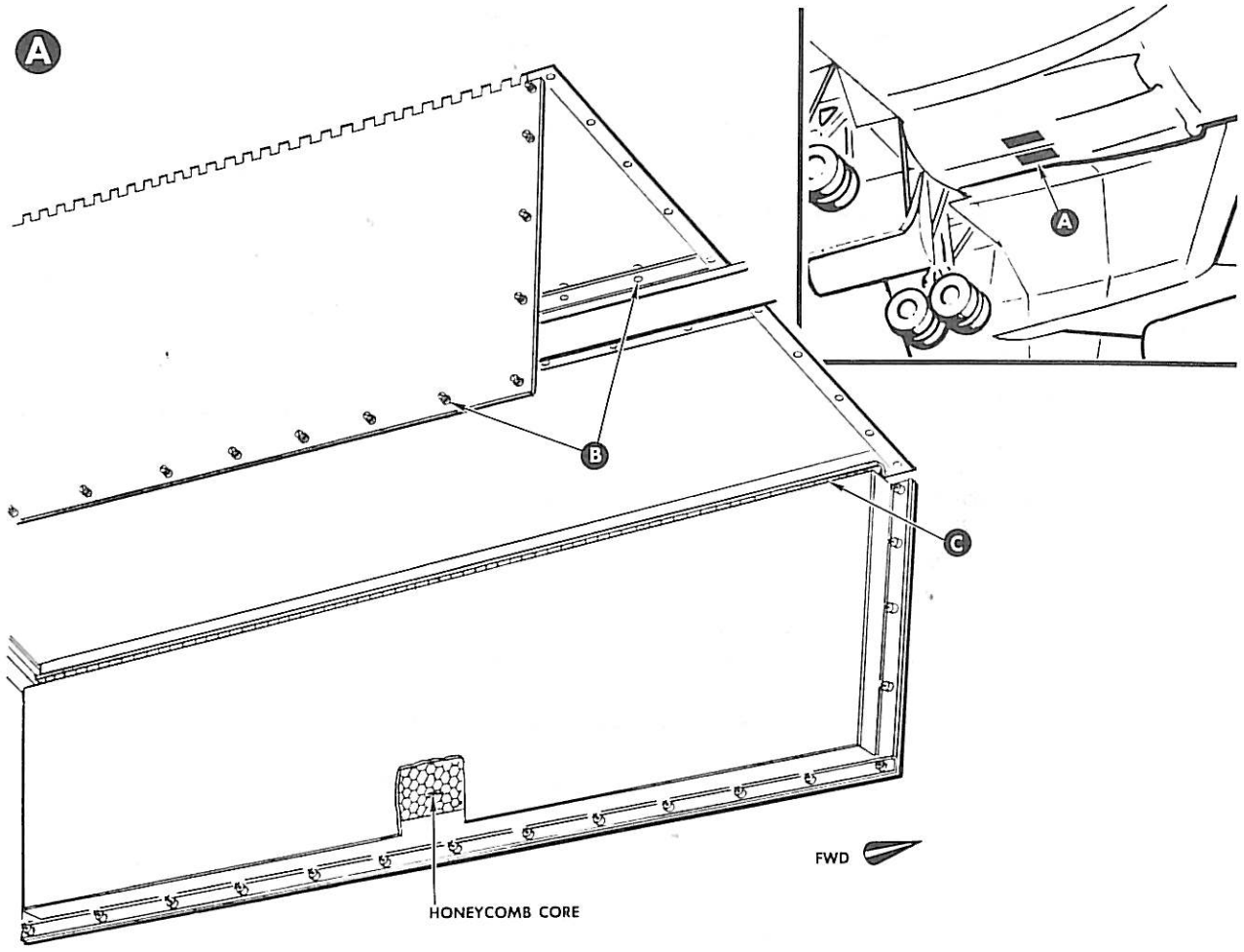
C. Remove Heat Exchanger Access Door.

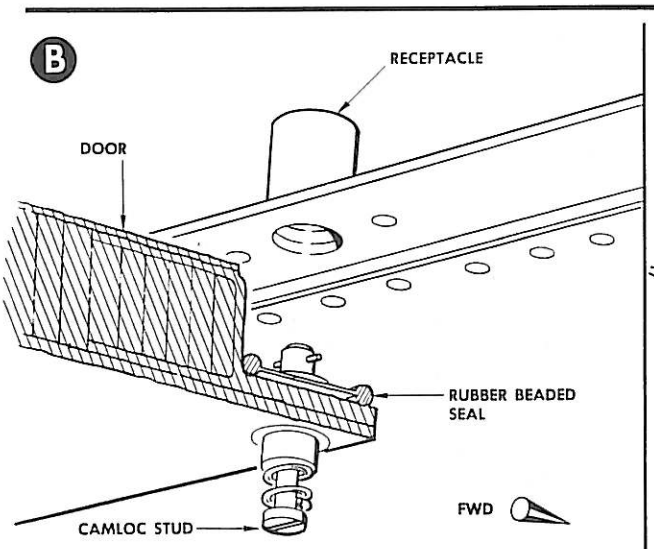
(1) Release Camloc fasteners along three sides of door and open door. — A & B

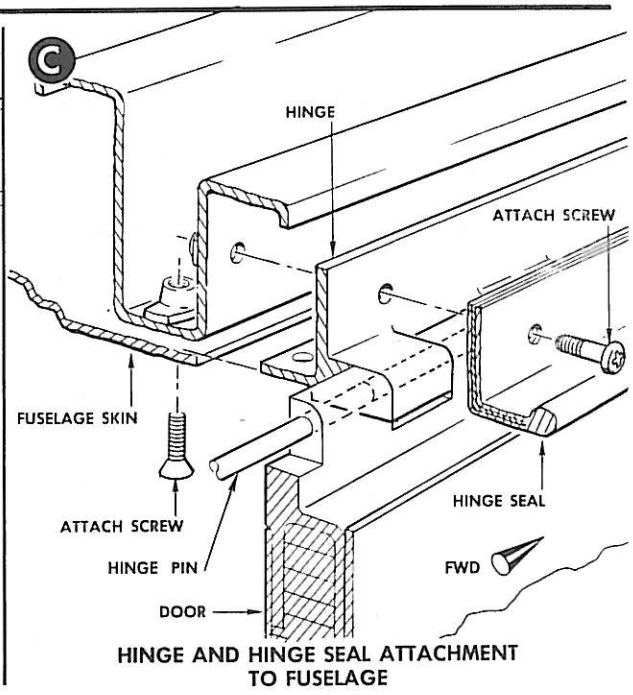
(2) Remove screws securing the interior vertical leg of hinge and the door hinge seal to fuselage structure; remove seal. (Bag and tag screws and hinge seal for installation.) — C

(3) Support door and remove screws securing the exterior attaching leg of hinge to the fuselage structure; remove door.

CAUTION: EXERCISE CARE WHEN REMOVING DOOR TO PREVENT DAMAGING THE FUSELAGE SKIN WHICH LAPS OVER THE EXTERIOR LEG OF DOOR HINGE.







HINGE AND HINGE SEAL ATTACHMENT TO FUSELAGE

30.02.52.050

D. Install Heat Exchanger Access Door.

Figure Detail

(1) Insert the exterior attaching leg of hinge under the fuselage skin lap and align screw holes with nutplates in fuselage structure; install screws. — C

(2) Position door hinge seal so that beaded edge will rest against door when door is closed.

(3) Align screw holes through seal and vertical leg of door hinge with nutplates in fuselage structure; install screws.

(4) Close door and secure Camloc fasteners. — A & B

(5) Check that the following conditions exist:

(a) Gap between door and fuselage skin shall be 0.060 (+0.000, -0.030) inch; trim door as required.

(b) Transverse mismatch shall not exceed 0.020 inch.

(c) Longitudinal mismatch shall not exceed 0.030 inch.

3. Removal/Installation Refrigeration Package Access Doors (see Figure 203)

A. General.

The removal and installation procedures for the refrigeration package access doors are identical.

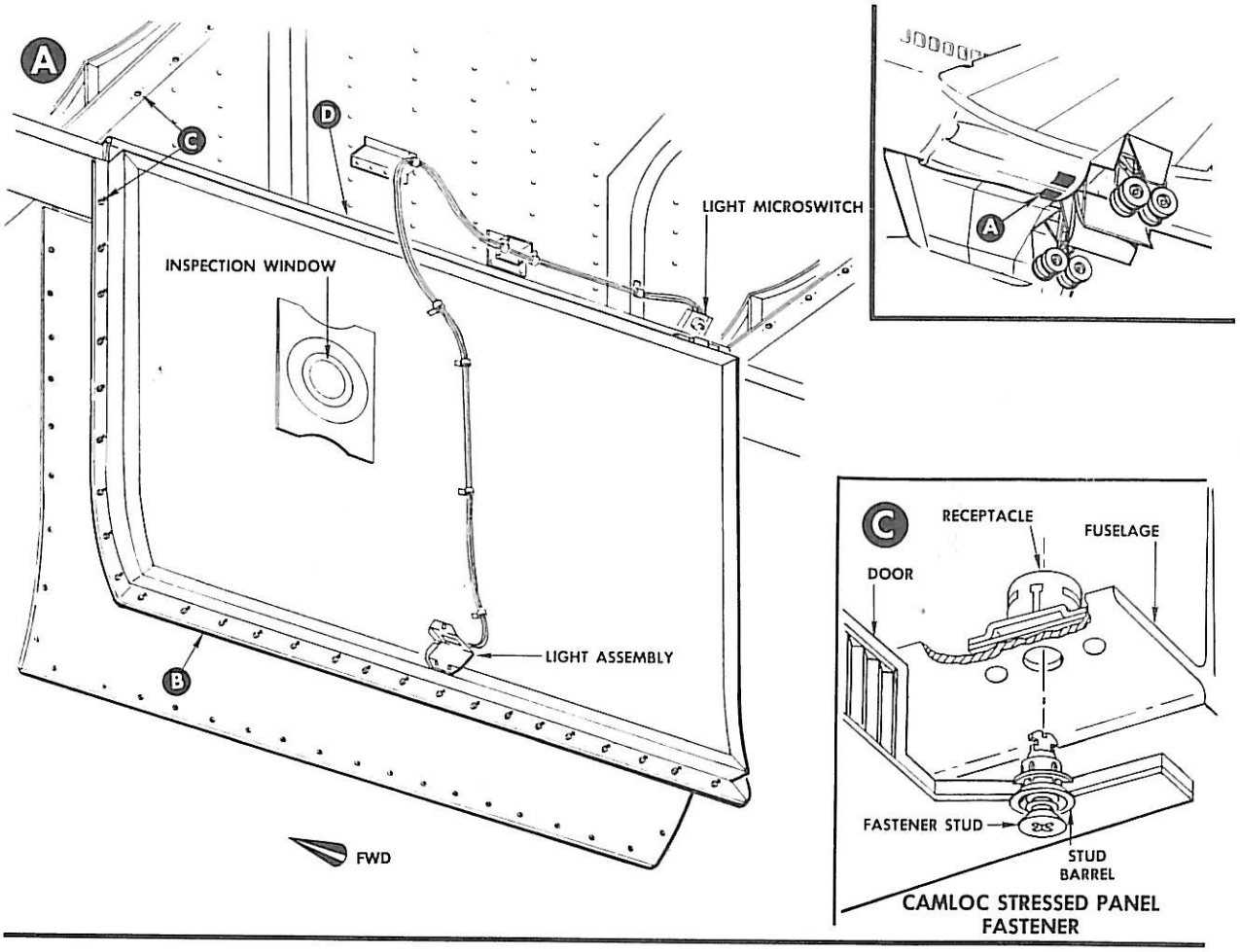
B. Equipment Required - None.

C. Remove Refrigeration Package Access Door.

(1) Release Camloc stressed panel fasteners along forward and aft edges of door, then along outboard edge as follows: — A & C

(a) Apply light pressure to fastener studs with screwdriver and rotate studs to the left until receptacle inserts engage stops.

NOTE: Stressed panel fasteners will release when rotated 1/4 turn to the left; however, if the threaded receptacle inserts are not turned the additional turns against the stop, it is difficult to re-engage fasteners when door is closed.


A
C
D
LIGHT MICROSWITCH
INSPECTION WINDOW
LIGHT ASSEMBLY
B
FWD
A
C
RECEPTACLE
FUSELAGE
DOOR
FASTENER STUD
STUD BARREL
CAMLOC STRESSED PANEL FASTENER
B
HINGE
HINGE SEAL
SEAL RETAINER
MICROSWITCH ACTUATOR BLOCK
FUSELAGE KEEL (REF)
DOOR
HINGE AND HINGE SEAL ATTACHMENT TO FUSELAGE KEEL AND DOOR
D
DOOR (SHOWN IN CLOSED POSITION)
HINGE SEAL AND RETAINER
FUSELAGE KEEL
HINGE

30.02.52.051

CAUTION: DO NOT USE POWER DRIVEN SCREWDRIVER.

Figure Detail

(b) Withdraw stud barrels of released fasteners as far as barrel retaining rings will permit.

CAUTION: IF STUD BARRELS ARE NOT FULLY WITHDRAWN, DAMAGE TO THE STRUCTURE MAY RESULT WHEN DOOR IS OPENED.

(c) Support weight of door before releasing last of the fasteners along outboard edge of door; open door slowly.

(2) Pull AIR COND & HYD COMPT LTS circuit breaker on the main circuit breaker panel in the flight compartment. Hang warning sign on circuit breaker.

(3) Remove screws attaching light harness clamps to door. (Bag and tag screws and clamps for installation.) — A

(4) Remove screws attaching light assembly to door, remove light assembly. (Bag and tag screws for installation.)

(5) Remove nuts and screws along hinge side of door which secure door to hinge; remove door. (Bag and tag nuts and screws for installation.) — B

D. Install Refrigeration Package Access Door.

(1) Support door in position so that hinge attach holes in the door align with holes in hinge. — B

(2) Install screws and nuts securing hinge to door.

(3) Align light assembly with screw holes in mounting bracket and install attach screws. — A

(4) Install screws attaching light assembly harness to door.

(5) Close AIR COND & HYD COMPT LTS circuit breaker on main circuit breaker panel; remove warning sign.

(6) Accomplish compartment light adjustment/test procedure. (Refer to Chapter 33, LIGHTS.)

(7) Close door slowly and engage the Camloc stressed panel fasteners as follows: — A & C

(a) Push fastener stud in as far as possible and rotate stud to the left until resistance is felt.

NOTE: When resistance is felt, the stud has engaged the receptacle insert.

(b) Continue applying inward pressure and rotate fastener stud to the right until fastener is secured.

CAUTION: TO PREVENT DAMAGE TO FASTENER ASSEMBLIES, DO NOT EXCEED A TORQUE OF 35 INCH-POUNDS WHEN ROTATING STUDS. DO NOT USE A POWER DRIVEN SCREWDRIVER.

(8) Check that the following conditions exist:

(a) Gap between door and fuselage skin shall be 0.060 (+0.000, -0.030) inch; trim door as required.

(b) Transverse mismatch shall not exceed 0.020 inch.

(c) Longitudinal mismatch shall not exceed 0.030 inch.

4. Inspection/Check Air Conditioning and Pressurization Compartment Doors

A. Check the following:

(1) Cracks and corrosion on door skins.

(2) Cracks and corrosion on door frames and hinges.

(3) Cracks, tears, cuts, and excessive abrasion of the door seals.

(4) Camloc fastener studs and receptacles for damage, excessive wear, and corrosion.

(5) Opening and closing operation of doors to assure that hinges are not binding.

(6) Camloc fastener studs engage their receptacles properly.

B. Check the following clearances:

(1) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch.

(2) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

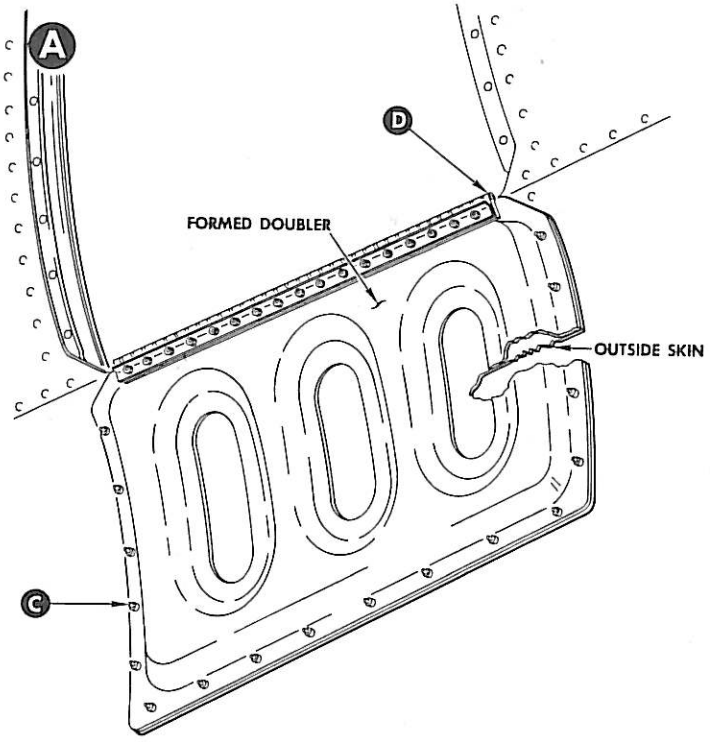
(3) Longitudinal mismatch between door and fuselage skin shall not exceed 0.030 inch.

AFT FUSELAGE DOORS - DESCRIPTION AND OPERATION

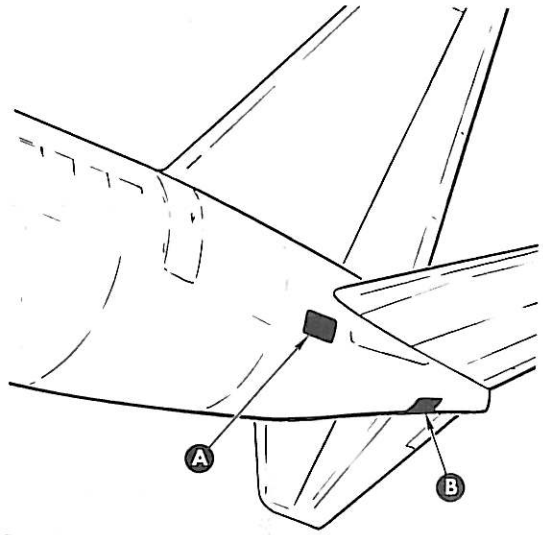
1. Description

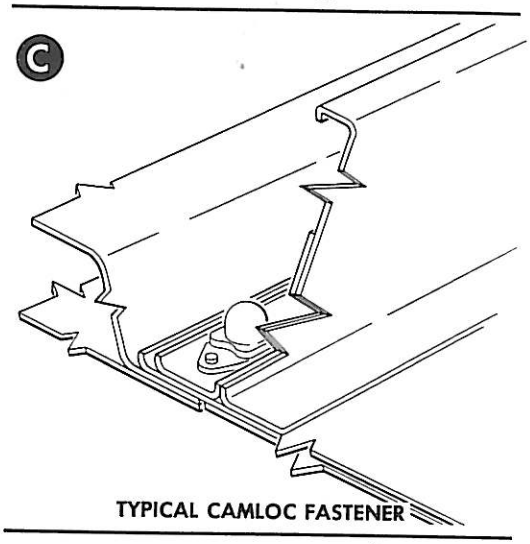
An outward opening aft fuselage door is located on the lower left side of the fuselage at station 1513. This door provides access to the aft unpressurized area of the fuselage (stabilizer screw jack location). The door is of formed doubler reinforced sheet construction and measures approximately 20 x 25 inches. A piano-type hinge along the lower edge of the door allows the door to hang down vertically when open. The door is secured in position by Camloc fasteners.

A second outward opening door provides access to the tail cone section of the aft fuselage. This door measures approximately 17-1/2 x 17-1/2 inches and is located at fuselage station 1650, on the bottom centerline of the fuselage. It is hinged on the right side by means of a piano-type hinge. The door is of formed doubler and sheet metal construction and is secured in position by Camloc fasteners. Both aft fuselage doors have a bead-type seal installed adjacent to the door hinge; no additional seals are provided. See Figure 1 for aft fuselage door locations and means of attachment.

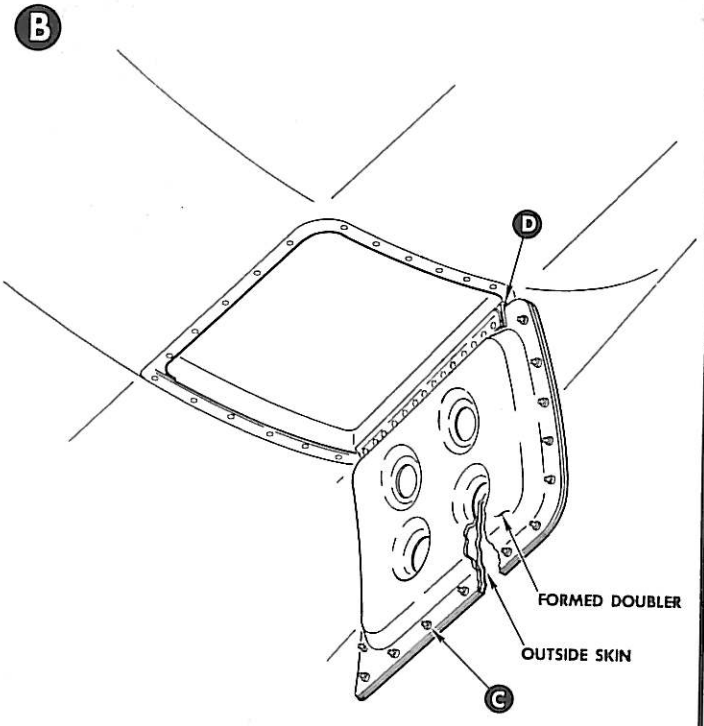


AFT FUSELAGE DOOR STA 1513

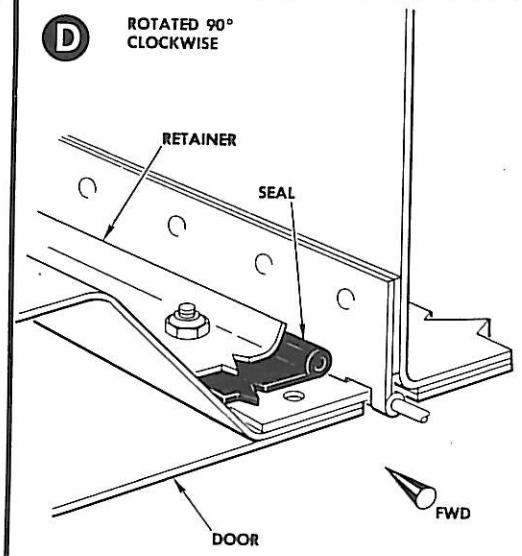




TYPICAL CAMLOC FASTENER



TAIL CONE DOOR STA 1650



TYPICAL HINGE SEAL ATTACHMENT

30 30 52 015A

AFT FUSELAGE DOORS - MAINTENANCE PRACTICES

1. Removal/Installation Aft Fuselage Doors (see Figure 201)

   A. General.

      Removal and installation procedures for both aft fuselage doors are identical.

   B. Equipment Required - None.

   C. Remove Aft Fuselage Door.

      (1) Release Camloc fasteners along three sides of door and open door.

      (2) Remove nuts and bolts securing the door, hinge seal and seal retainer to hinge; remove door, seal and retainer.

   D. Install Aft Fuselage Door.

      (1) Support door so that screw holes align with attach holes in hinge; insert screw through holes at each end to hold door.

      (2) Align screw holes through hinge seal and seal retainer with screw holes in door and hinge.

         NOTE: Beaded edge of hinge seal shall be positioned next to hinge.

      (3) Install remaining screws and nuts securing door, hinge seal, and seal retainer to the door hinge.

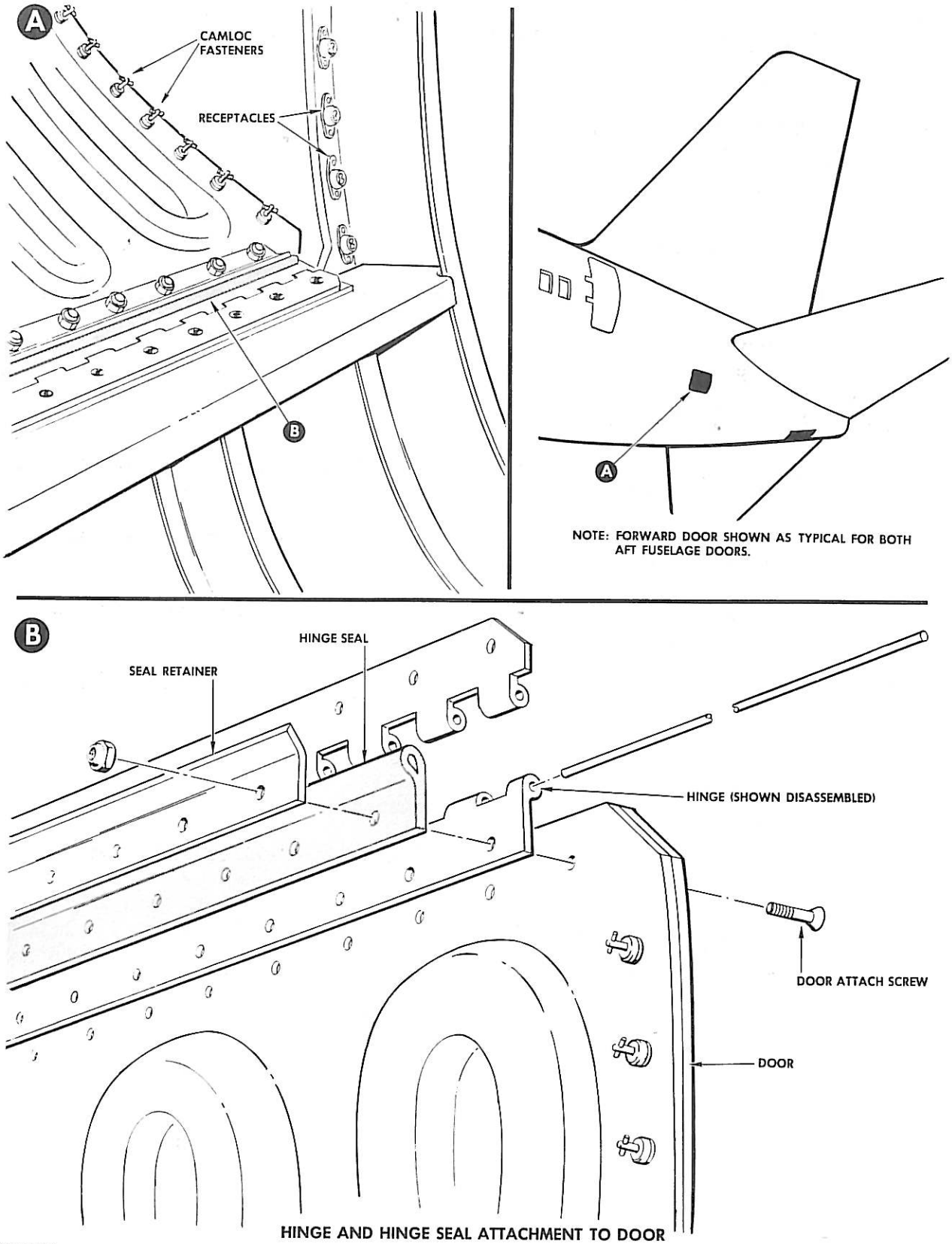
      (4) Close door and secure Camloc fasteners.

      (5) Check that the following conditions exist:

         (a) Gap between door and fuselage skin shall be 0.060 (+0.000, -0.030) inch; trim door as required.

         (b) Transverse mismatch shall not exceed 0.020 inch.

         (c) Longitudinal mismatch shall not exceed 0.030 inch.



HINGE AND HINGE SEAL ATTACHMENT TO DOOR

3002.52.052

2. Inspection/Check Aft Fuselage Doors

A. Check the following:

(1) Cracks and corrosion on door skins.

(2) Cracks and corrosion on door frames and hinges.

(3) Cracks, tears, cuts, and excessive abrasion of the door hinge seals.

(4) Camloc fastener studs and receptacles for damage, excessive wear and corrosion.

(5) Opening and closing operation of doors to assure that hinges are not binding.

(6) Camloc fastener studs engage their receptacles properly.

B. Check the following clearances:

(1) Gap between fuselage skin and door shall be 0.060 (+0.000, -0.030) inch.

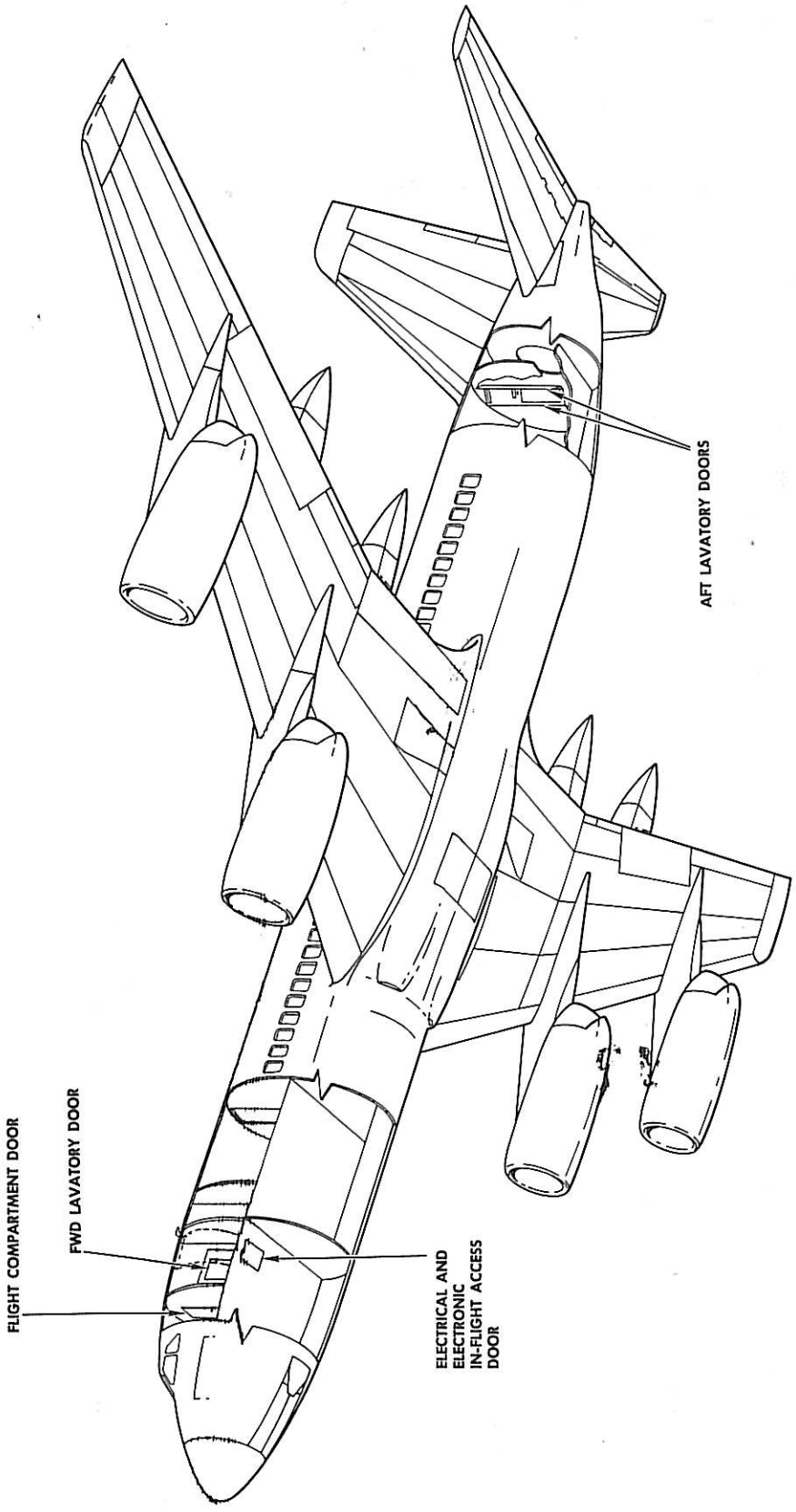
(2) Transverse mismatch between door and fuselage skin shall not exceed 0.020 inch.

(3) Longitudinal mismatch between door and fuselage skin shall not exceed 0.030 inch.

CABIN INTERIOR DOORS - DESCRIPTION AND OPERATION

1. General

Five doors are installed in the interior of the cabin--one is located at the entrance to the flight compartment and the other four are located at the forward and aft lavatories. An access door is also installed in the floor of the forward coat closet to provide interior access to the electrical and electronic compartment. For general arrangement of the cabin interior doors see Figure 1.



Cabin Interior Doors - General Arrangement
Figure 1

FLIGHT COMPARTMENT DOOR - DESCRIPTION AND OPERATION

1. Description

The flight compartment door is hinged to the right side of the aft flight compartment partition with quick-release, nonlocking hinge pins in the upper and lower right-hand edges. The door is equipped with a locking-type door latch and contains a window approximately 7 x 14 inches in size in its upper portion. Door construction consists of two 0.016-inch fiberglas faces bonded to a one-inch thick plastic impregnated paper honeycomb core. The door also incorporates a one-inch thick spruce gusset at each corner, and one-inch thick spruce edging along the left-hand edge. Mounted on the forward side of the door and directly below the window is the airplane certification holder and the radio license. The fire axe and its holder are also positioned on the lower forward side of the door. A sliding, track mounted curtain is also employed on the forward side of the door to cover the window.

FLIGHT COMPARTMENT DOOR - MAINTENANCE PRACTICES

1. Removal/Installation Flight Compartment Door (see Figure 201)

   A. Equipment Required - None.

   B. Remove Flight Compartment Door.

      (1) Open door to the full open position.

      (2) Remove screws securing edge trim along hinge side of door and remove trim.

      (3) Pull the quick-release, nonlocking hinge pins at the upper and lower right-hand edges of door; remove door.

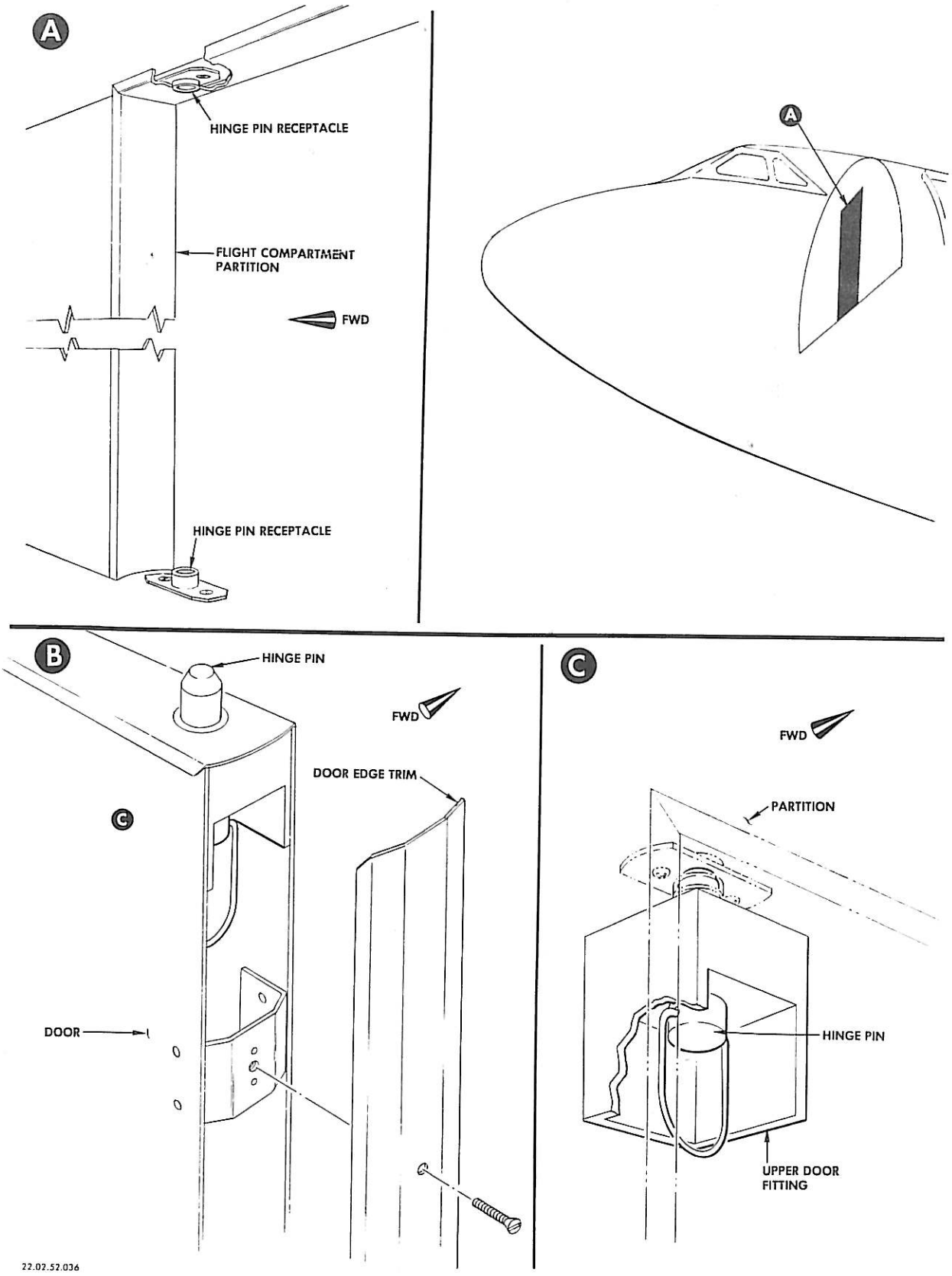
   C. Install Flight Compartment Door.

      (1) Position door in opening so that the quick-release, nonlocking hinge pins at upper and lower right-hand edge of door align with receptacles in partition.

      (2) Engage both quick-release, hinge pins with receptacles in partition.

         NOTE: The hinge pin receptacles are slotted to provide vertical alignment of door hinge. To adjust hinge pin alignment, loosen two screws securing the hinge pin receptacle and reposition receptacle as required.

      (3) Reinstall edge trim of door and secure with screws.


A
HINGE PIN RECEPTACLE
FLIGHT COMPARTMENT PARTITION
FWD
HINGE PIN RECEPTACLE
A
B
HINGE PIN
FWD
DOOR EDGE TRIM
C
DOOR
C
FWD
PARTITION
HINGE PIN
UPPER DOOR FITTING
22.02.52.036

LAVATORY DOORS, FORWARD AND REAR - DESCRIPTION AND OPERATION

1. Description

The forward lavatory doors are identical except the forward door hinges on the forward side and the aft door hinges on the aft side. The doors are hinged with a piano-type hinge. In addition to the door latch mechanism, each door is equipped with a sliding lock bolt that actuates the VACANT-OCCUPIED sign on the aisle side of the door and controls the lighting in the VACANT-OCCUPIED sign. Each door is also equipped with an adjustable, flush-type coat hook on the lavatory side of the door. Provisions are also made so that the stewardess can unlock the lavatory doors from the aisle side. The doors are made of honeycomb sandwich construction consisting of one-inch thick impregnated paper honeycomb core with 0.016-inch thick fiberglas facings. A rubber bumper is installed along the top edge of the forward lavatory doors to eliminate damage from adjacent door interference.

The rear lavatory doors are constructed similar to the forward lavatory doors, except each door is hinged at the cabin centerline with a piano-type hinge and opens forward. The forward side of each door is equipped with a built-in magazine storage rack.

LAVATORY DOORS - MAINTENANCE PRACTICES

1. Removal/Installation Lavatory Doors (see Figure 201)

   A. General.

      Removal and installation procedure for the forward and aft lavatory doors are identical.

   B. Equipment Required - None.

   C. Remove Lavatory Door.

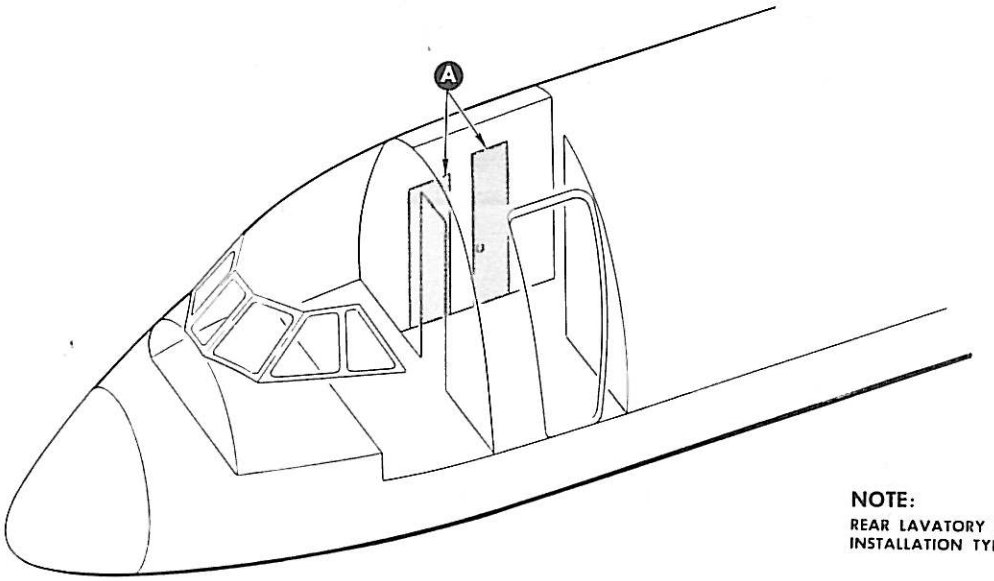
      (1) Open door to the full open position.

      (2) Remove screws securing door hinge to partition; remove door.

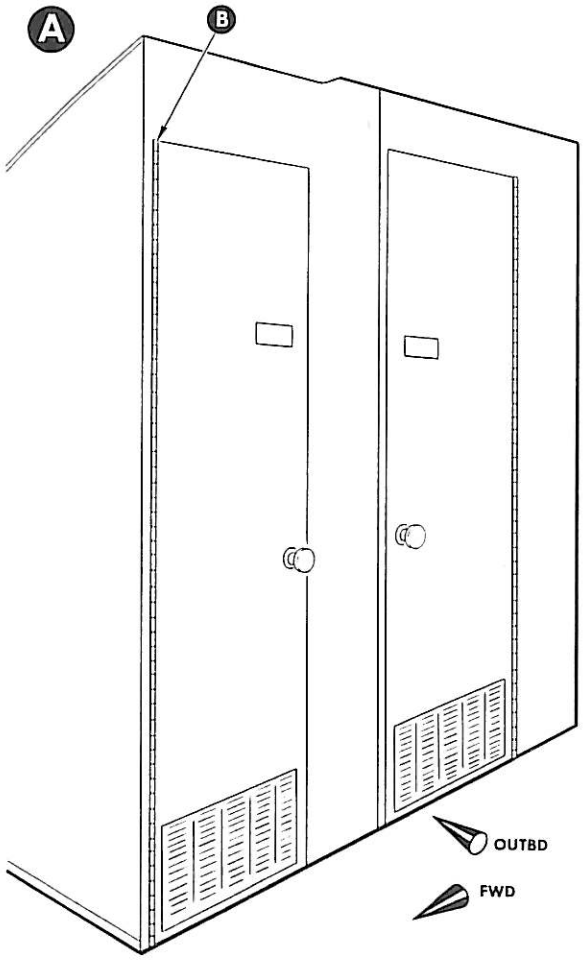
   D. Install Lavatory Door.

      (1) Support door so that screw holes in hinge align with nutplates in partition.

      (2) Install screws.



NOTE:
REAR LAVATORY DOOR INSTALLATION TYPICAL



LAVATORY DOORS (TYPICAL)

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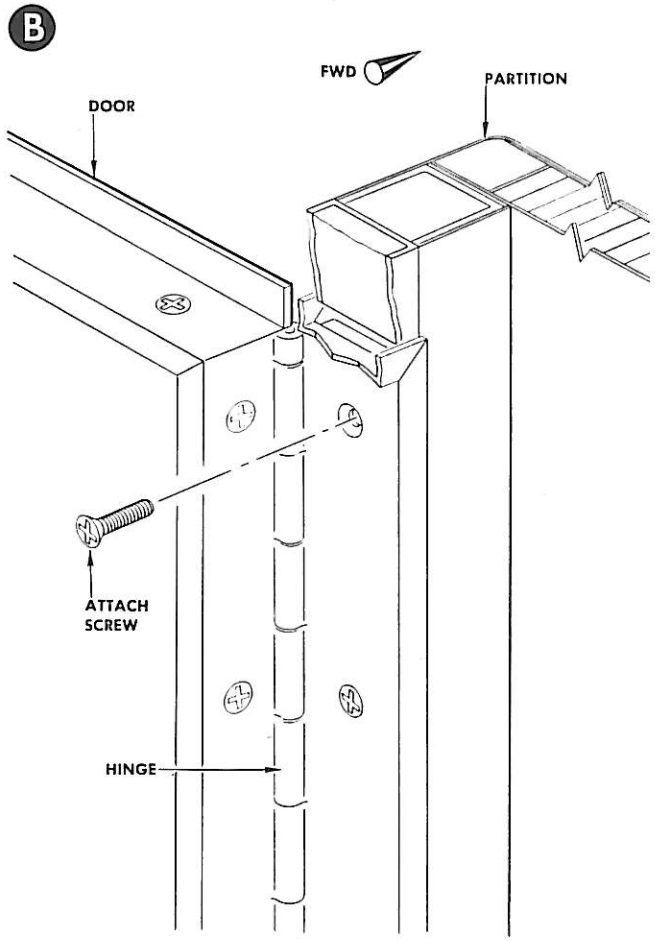


DOOR SHOWN OPEN

ELECTRICAL AND ELECTRONIC COMPARTMENT INFLIGHT ACCESS DOOR - DESCRIPTION AND OPERATION

1. Description

Inflight access to the electrical and electronic compartment is gained through an access door in the forward coat closet flooring between stations 306 and 325. This access door is of aluminum alloy honeycomb sandwich construction and measures approximately 19 x 23 inches in size. Four Camloc fasteners secure the door in place.

ELECTRICAL AND ELECTRONIC COMPARTMENT INFLIGHT ACCESS DOOR - MAINTENANCE PRACTICES

1. Removal/Installation Electrical and Electronic Compartment Inflight Access Door (see Figure 201)

   A. Equipment Required - None.

   B. Remove Electrical and Electronic Compartment Inflight Access Door.

      (1) Slide curtain of forward left-hand coat closet back to provide access.

      (2) Release two Camloc fasteners securing treadplate to cabin flooring; remove treadplate.

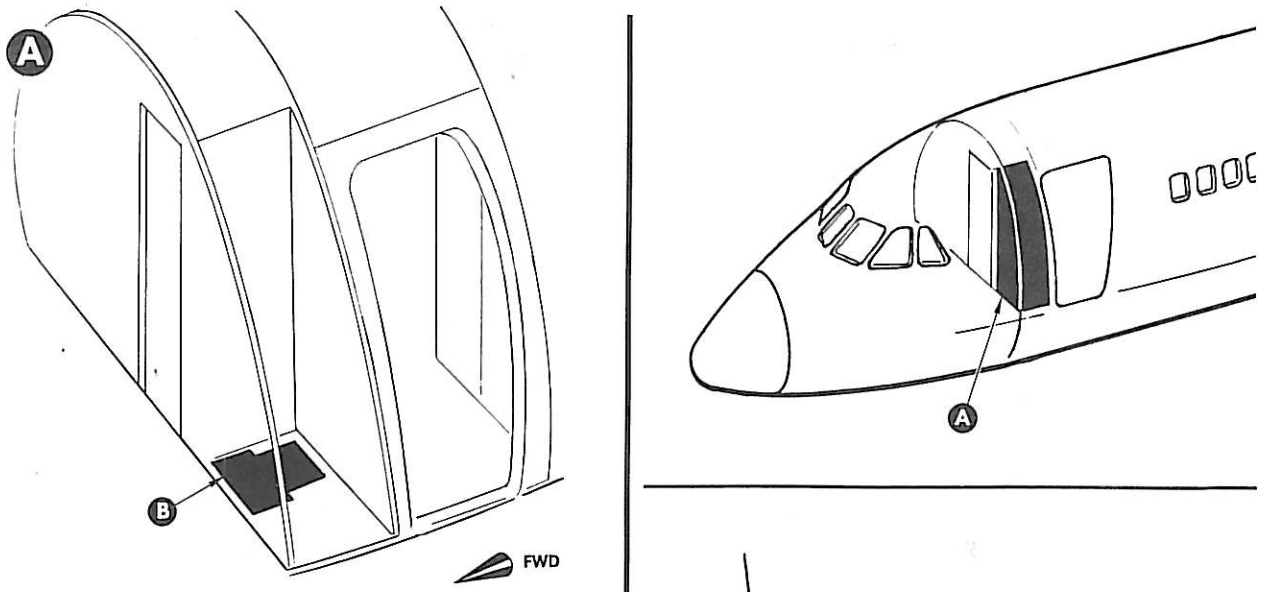
      (3) Release four Camloc fasteners securing the inflight access door.

      (4) Lift door from opening.

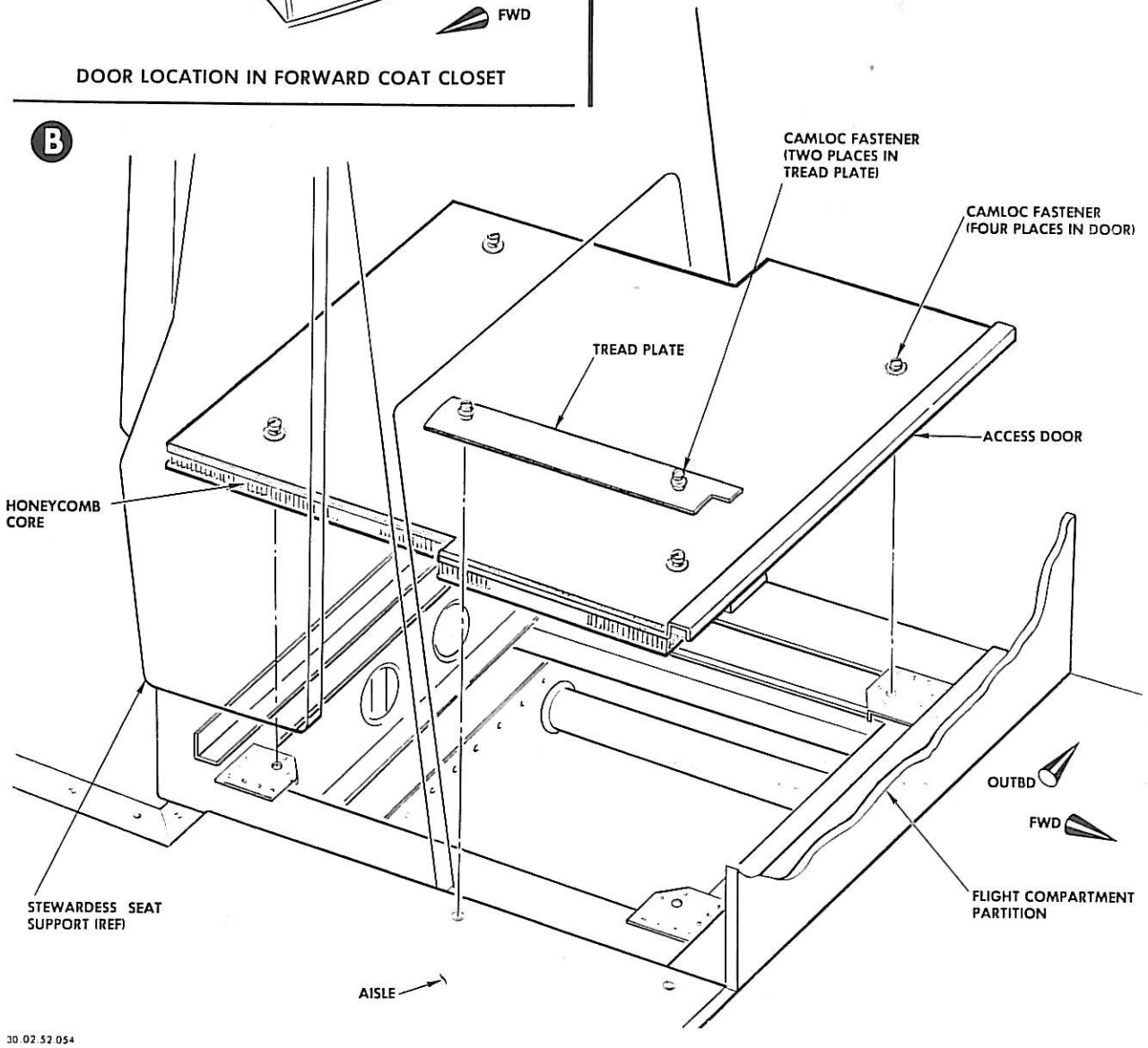
   C. Install Electrical and Electronic Compartment Inflight Access Door.

      (1) Position the inflight access door over opening in coat closet floor and secure four Camloc fasteners.

      (2) Position treadplates along inboard edge of door and secure two Camloc fasteners.



DOOR LOCATION IN FORWARD COAT CLOSET



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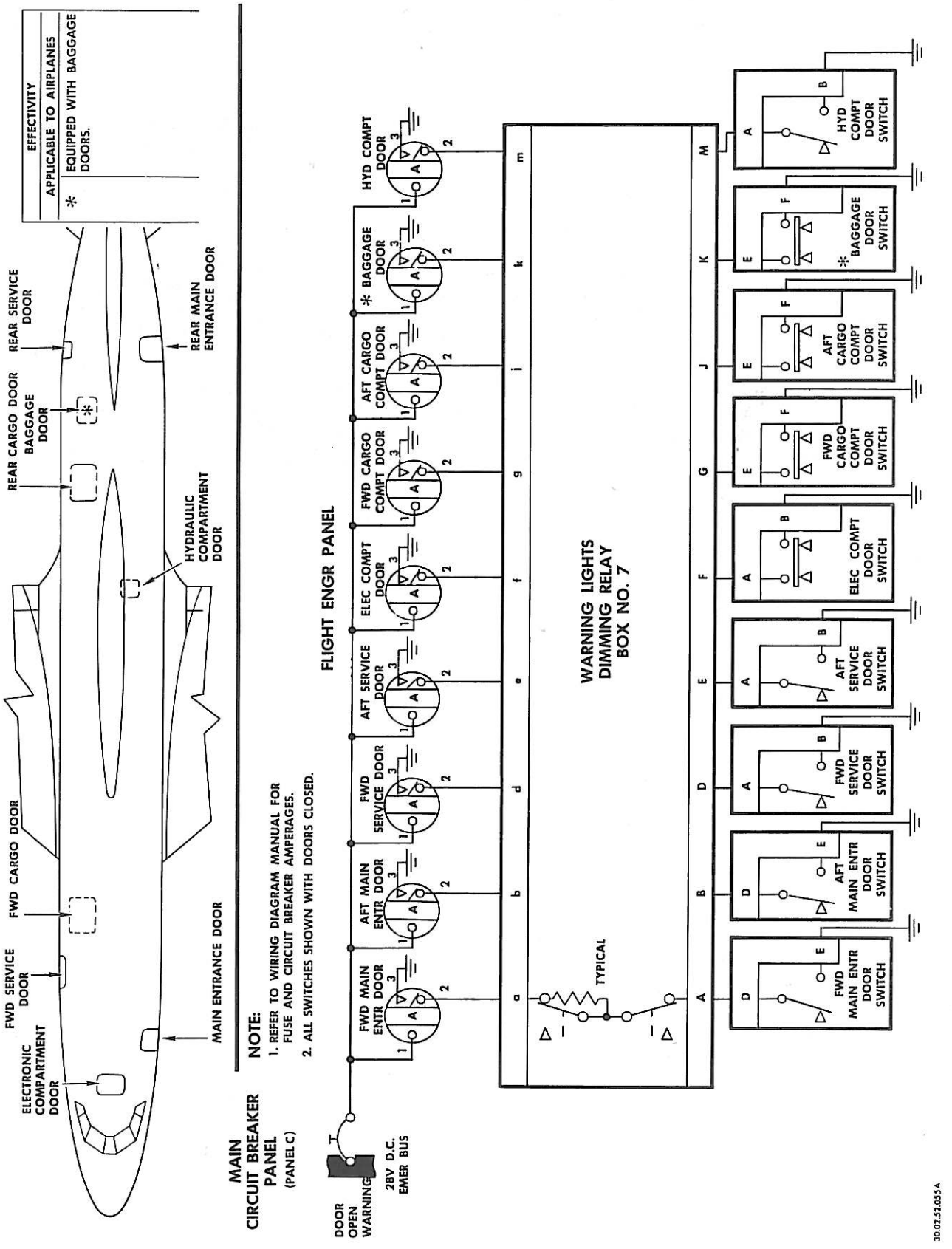
Electrical and Electronic Compartment Inflight Access Door Installation
Figure 201

DOOR-OPEN WARNING SYSTEM - DESCRIPTION AND OPERATION

1. General

Door microswitches are mounted in the fuselage on the forward side of each main entrance and service door, on the door sill between the hinges on the electronic compartment door, and in the door frame for the hydraulic compartment door. Cargo compartment door microswitches are located in the door frames of the cargo compartment and are actuated by the bayonet fittings that lock the doors. (The door microswitches also connect into lighting circuits to control respective area illumination when the doors are open; refer to Chapter 33, LIGHTS.) Each door-open warning circuit connects to individual warning lights located on the flight crews instrument panels; refer to Chapter 33, LIGHTS, for locations. Each door microswitch will energize its respective door-open warning circuit and illuminate the corresponding warning light whenever its respective door is not in the fully closed-and-locked position. Electrical power is supplied by the 28-volt, dc emergency bus and the system is protected by a single 2-ampere circuit breaker on the main circuit breaker panel in the flight compartment. See Figure 1 for a schematic illustration of the door-open warning system.



Door-Open Warning System
Figure 1

DOOR-OPEN WARNING SYSTEM - TROUBLE SHOOTING

POSSIBLE CAUSE	ISOLATION PROCEDURE AND CORRECTION
1. DOOR-OPEN WARNING LIGHT DOES NOT ILLUMINATE WITH ASSOCIATED DOOR(S) OPEN	
A. Defective bulb.	Check that DOOR OPEN WARN CIRCUIT BREAKER is in closed position. Depress warning light to check bulbs. If warning light illuminates, bulbs are okay. If warning light does not illuminate bulbs are defective. Replace defective bulbs.
B. Defective door microswitch.	Pull DOOR OPEN WARN circuit breaker and associated area lighting circuit breaker (refer to Chapter 33, LIGHTS) on main circuit breaker panel and tag. Check continuity through each associated door microswitch. Replace defective door microswitch.
C. Open circuit.	Pull DOOR OPEN WARN circuit breaker and associated area lighting circuit breaker (refer to Chapter 33, LIGHTS) on main circuit breaker panel and tag. Check continuity between circuit breaker and dimming relay, repair and replace as necessary. If continuity checks okay between circuit breaker and dimming relay, check continuity between dimming relay and door microswitches. Repair and replace as necessary.
2. DOOR-OPEN WARNING LIGHT WILL NOT EXTINGUISH WITH ASSOCIATED DOOR(S) CLOSED	
A. Door microswitch out of adjustment.	Check that all doors are properly closed. If doors are properly closed, a defective microswitch or a microswitch out-of-adjustment is indicated. Tape associated door microswitch plungers in actuated position. If warning light stays illuminated, a defective microswitch or short circuit is indicated. If light extinguishes, check each associated door

POSSIBLE CAUSE	ISOLATION PROCEDURE AND CORRECTION
2. DOOR-OPEN WARNING LIGHT WILL NOT EXTINGUISH WITH ASSOCIATED DOOR(S) CLOSED (CONT)	
	microswitch as follows: Remove tape from one door microswitch; light will illuminate. Then close door; light should extinguish. If light does not extinguish, adjust door microswitch. (See microswitch removal/installation procedure.) Accomplish microswitch adjustment/test at each of the associated doors in circuit until trouble is found.
B. Defective microswitch.	If light does not extinguish when associated door microswitches are held actuated with tape, check continuity through each door microswitch. Replace defective microswitch.
C. Short circuit.	Check continuity between warning light, on copilot's auxiliary panel, and dimming relay; repair and replace as necessary. If continuity between warning light and dimming relay checks okay, check continuity between dimming relay and door microswitches. Repair and replace as necessary.

DOOR-OPEN WARNING SYSTEM - MAINTENANCE PRACTICES

1. Removal/Installation Main Entrance and Service Door Microswitches (see Figure 201)

A. General.

Except for access, removal and installation procedures for the main entrance and service door microswitches are similar. However, the microswitch and pin assembly for the forward main entrance door differs from the others as shown on Figure 201.

B. Equipment Required - None.

C. Remove Door Microswitch.

(1) Open DOOR OPEN WARN LTS circuit breaker on main circuit breaker panel and hang warning sign at circuit breaker.

WARNING: WHEN REMOVING DOOR MICROSWITCH AT FORWARD AND REAR MAIN ENTRANCE DOORS ALSO ACTUATE PASSENGER "ENT" LIGHTS CIRCUIT BREAKER SWITCH TO "OFF" ON THE APPLICABLE FORWARD OR AFT STEWARDESS PANEL, AND HANG WARNING SIGN ON STEWARDESS PANEL.

(2) Remove interior trim and insulation forward of door (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

(3) Cut microswitch leads on microswitch side of permanent splice. (Tag leads for installation.)

(4) Remove jam nut securing microswitch to mounting bracket.

(5) Remove microswitch.

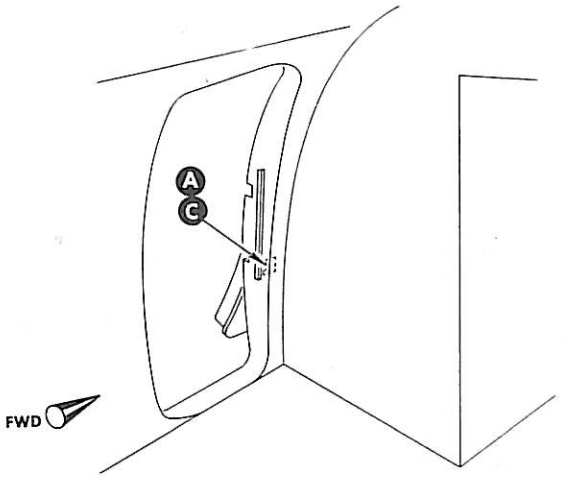
(6) Withdraw switch actuating plunger from door frame and track.

D. Install Door Microswitch.

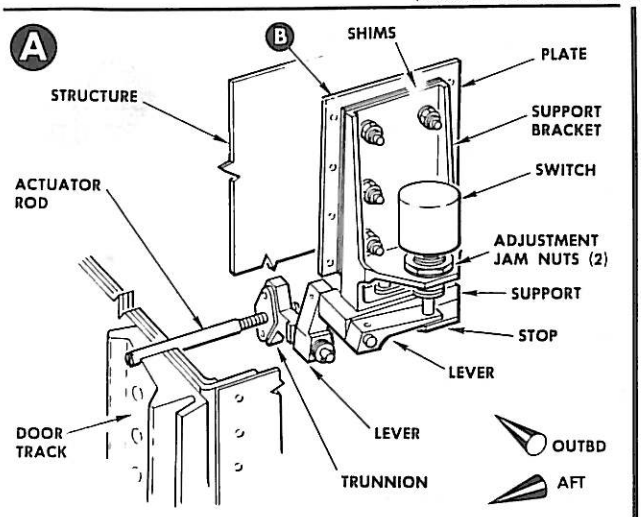
(1) Position microswitch in mounting bracket and install jam nut.

(2) At rear main entrance and both service doors, adjust jam nuts on forward and aft side of mounting bracket to position microswitch so that with microswitch deactuated, the switch actuating plunger tip extends 0.75 inch aft of the mounting bracket.

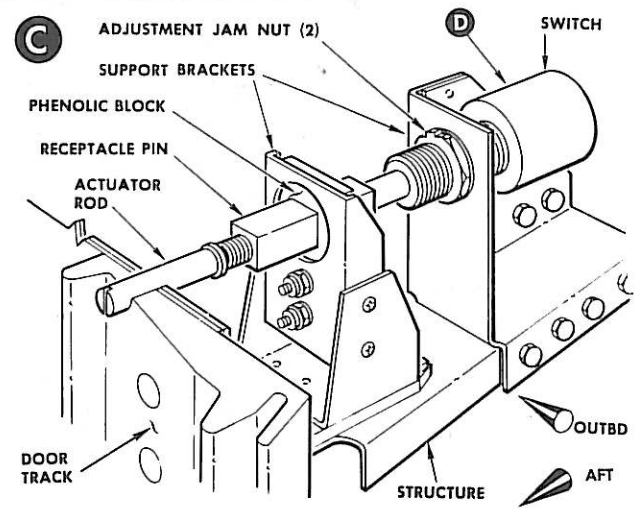
(3) At forward main entrance door, adjust jam nuts on forward and aft side of mounting bracket to position microswitch so that with microswitch deactuated, the switch actuating plunger tip just touches pivot arm.



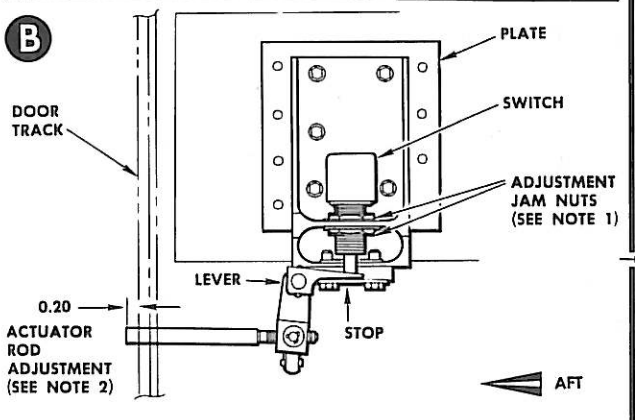
FWD MAIN ENTRANCE DOOR
(SWITCH MOUNTING LOCATION TYPICAL FOR ALL DOORS)



FWD MAIN ENTRANCE DOOR SWITCH



AFT MAIN ENTRANCE DOOR SWITCH
(TYPICAL FOR FWD & AFT SERVICE DOOR)



NOTES:
1. POSITION SWITCH SO THAT SWITCH PLUNGER, WHILE RELAXED, JUST TOUCHES LEVER.
2. ADJUST ACTUATOR ROD, WITH SCREWDRIVER, TO OBTAIN 0.20-INCH PROTRUSION THROUGH DOOR TRACK.

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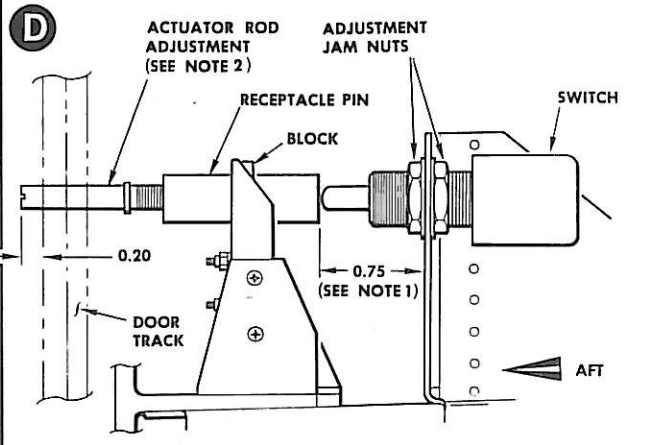


NOTES:
1. POSITION SWITCH SO THAT SWITCH PLUNGER TIP, WHILE RELAXED, EXTENDS 0.75 INCH AFT OF THE MOUNTING BRACKET.
2. ADJUST ACTUATOR ROD, WITH SCREWDRIVER, TO OBTAIN 0.20-INCH PROTRUSION THROUGH DOOR TRACK.

Main Entrance and Service Doors Microswitch
Installation/Adjustment - Typical
Figure 201

(4) At all doors, adjust switch actuating pin at screwdriver slot in tip so that pin protrudes 0.20 inch through the fuselage door track.

(5) Connect leads to microswitch, install permanent splice as directed in 990 Wiring Diagram Manual "Notes" section. Remove tags.

(6) Close circuit breaker(s) and remove warning sign(s).

(7) Perform door-open warning test procedure.

2. Removal/Installation Cargo and Equipment Access Door Microswitch (see Figure 202)

A. General.

Removal and installation procedures for the cargo and equipment access door microswitches are identical except for interior trim and soundproofing removal. Interior trim and soundproofing are not installed at all door microswitch locations.

B. Equipment Required - None.

C. Remove Door Microswitch.

(1) Open DOOR OPEN WARN LTS circuit breaker on main circuit breaker panel and hang warning sign at circuit breaker.

(2) Open the applicable compartment lights circuit breaker on the main circuit breaker panel and hang warning sign at circuit breaker.

(a) E & E COMPT LTS circuit breaker for electronic compartment door microswitch removal.

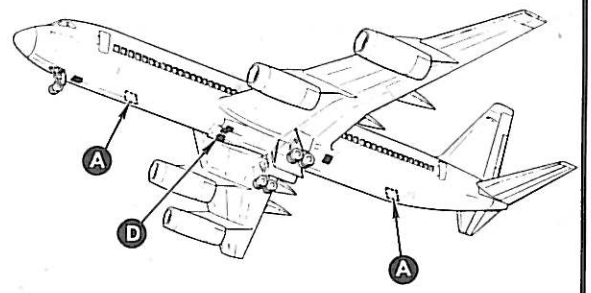
(b) AIR COND & HYD COMPT LTS circuit breaker for hydraulic compartment door microswitch removal.

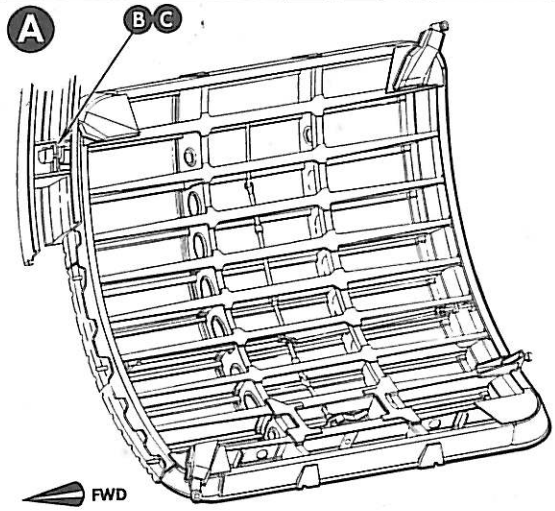
(c) FWD CARGO COMPT LTS circuit breaker for forward cargo compartment door microswitch removal.

(d) AFT CARGO & TAIL COMPT LTS circuit breaker for aft cargo compartment door microswitch removal.

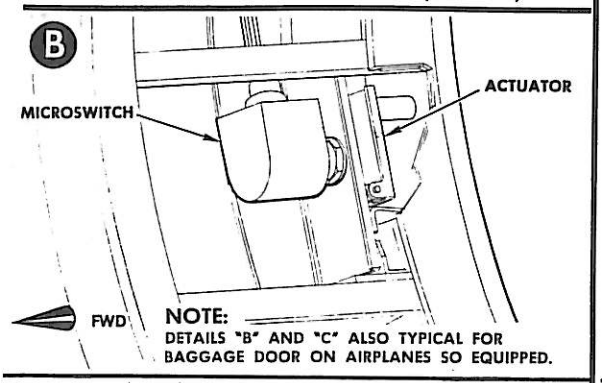
(3) Remove interior trim and insulation (if installed) at door microswitch location (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

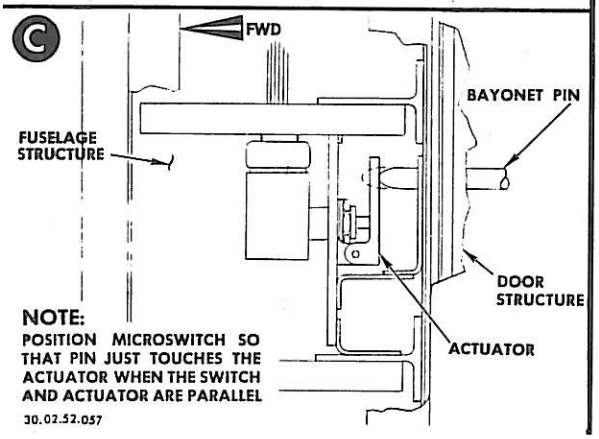
(4) Cut microswitch leads on microswitch side of permanent splice. (Tag leads for installation.)

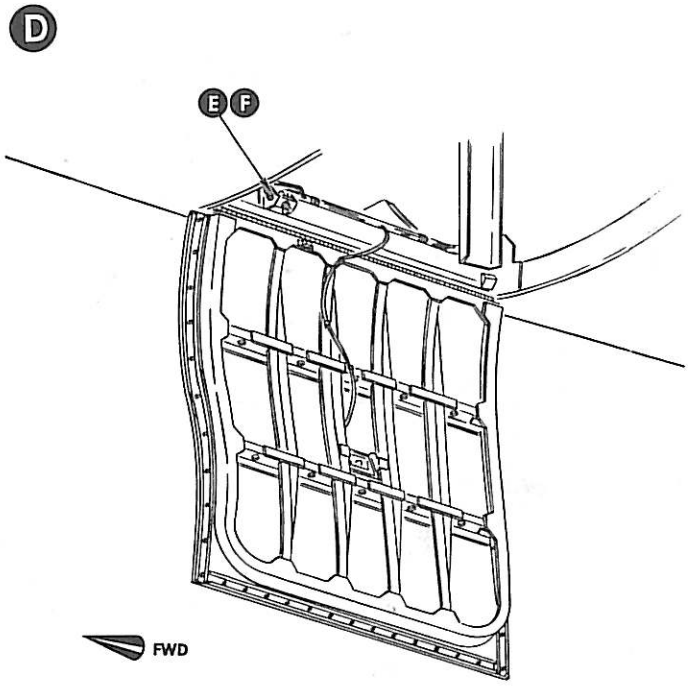




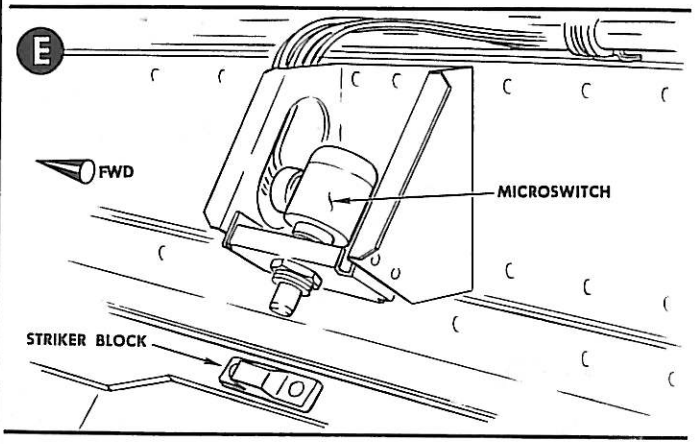
CARGO COMPARTMENT DOOR (TYPICAL)

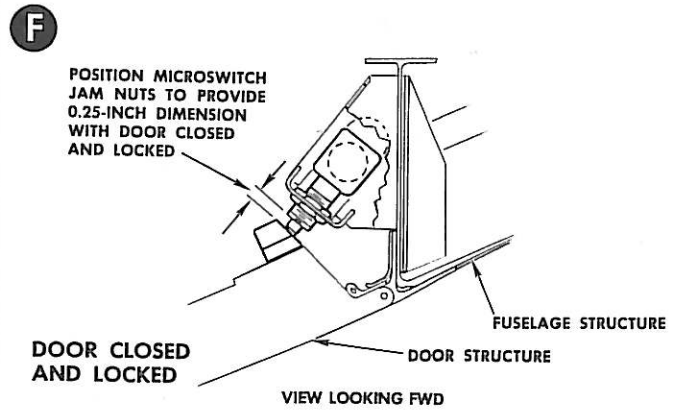






AIR CONDITIONING ACCESS DOOR (TYPICAL)





Cargo and Equipment Access Door Microswitch
Installation/Adjustment - Typical
Figure 202

(5) Remove jam nut and spacer securing microswitch to door frame.

NOTE: Spacer not used on cargo compartment door microswitch.

(6) Remove microswitch.

D. Install Door Microswitch.

(1) Position microswitch through mounting hole in door frame and install spacer and jam nut.

NOTE: Spacer not used on cargo compartment door microswitches.

(2) Adjust jam nuts on forward and aft side of door frame to position the microswitch so its plunger extends 0.25 inch from the threaded end of microswitch, with door closed and locked.

(3) Connect leads to microswitch, install permanent splice as directed in 990 Wiring Diagram Manual "Notes" section. Remove tags.

(4) Replace interior trim and insulation (if installed) at door microswitch location (refer to Chapter 25, EQUIPMENT/FURNISHINGS).

(5) Close circuit breakers and remove warning signs.

(6) Perform door-open warning test procedure.

3. Adjustment/Test Door-Open Warning System

A. Equipment Required.

(1) Source of 115/200-volt, 3-phase, 400 cps ac electrical power.

B. Preparation.

(1) Close and latch the following doors.

(a) Forward and rear main entrance doors.

(b) Forward and rear service doors.

(c) Forward and aft cargo compartment doors.

(d) Electronic compartment door.

(e) Hydraulic compartment door.

(2) Connect external power to the airplane. (Refer to Chapter 24, ELECTRICAL POWER.)

(3) Determine that DOOR OPEN WARN LTS circuit breaker on main circuit breaker panel is closed.

NOTE: The door open warning lights above the flight engineer's control panel shall be extinguished.

(4) Check push-to-test feature of each door open warning light above the flight engineer's control panel. Each warning light shall illuminate when depressed.

C. Test Procedure.

(1) Successively open and close the following doors and observe corresponding door open warning light.

(a) Forward main entrance door.

(b) Forward service door.

(c) Rear main entrance door.

(d) Rear service door.

The corresponding door open warning light shall illuminate as door control handle is rotated to the OPEN position; warning light shall extinguish when door control handle is rotated to the CLOSE position.

NOTE: The door microswitch at each of the above doors shall be depressed 0.210 inch maximum when door is closed and locked.

(2) Successively open and close the following doors and observe corresponding door open warning lights.

(a) Electronic compartment door.

(b) Forward cargo compartment door.

(c) Hydraulic compartment door.

(d) Rear cargo compartment door.

The corresponding door open warning light shall illuminate when door is unlatched and starts to open; warning light shall extinguish when door is closed and latched.